JOURNAL

OF AMERICAN INSURANCE

JUNE, 1959 Vol. 35—No. 6

Our Fast-Changing Farm Complex

The Battle Against Big Fires

Overdue: Stricter Driver Relicensing

New Waterway Era for World Commerce

Hail to June's Insurance Grads

Smokeless, Gasless Auto Exhaust?

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OUR COVERS

FOR ITS DAY, the Erie Canal (*front cover*) was no less spectacular as a new artery of east-west commerce than is the world-accommodating St. Lawrence Seaway opening this June. At "a cent and a half a mile, a mile and a half an hour," the Erie, opened in 1825, offered the fastest, cheapest route for east-west freight. The New York to Buffalo trip depicted in the front-cover illustration took about five days.

Now, in the imagery of the Erie, the Seaway and its connecting facilities are the fulfillment of a canal builder's dream—a fully integrated system of inland water transportation from Labrador to the Gulf of Mexico and funneling out from thence to ports all over the globe.

Meeting place of the system's two great channels—the Seaway and the Illinois Waterway—will be Lake Calumet Harbor (*back cover*) at the Chicago port-site on Lake Michigan. ⊙

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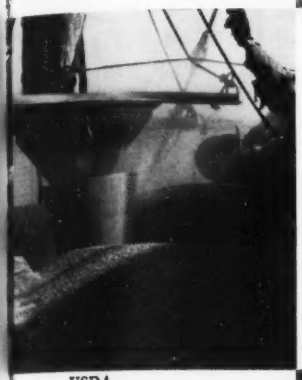
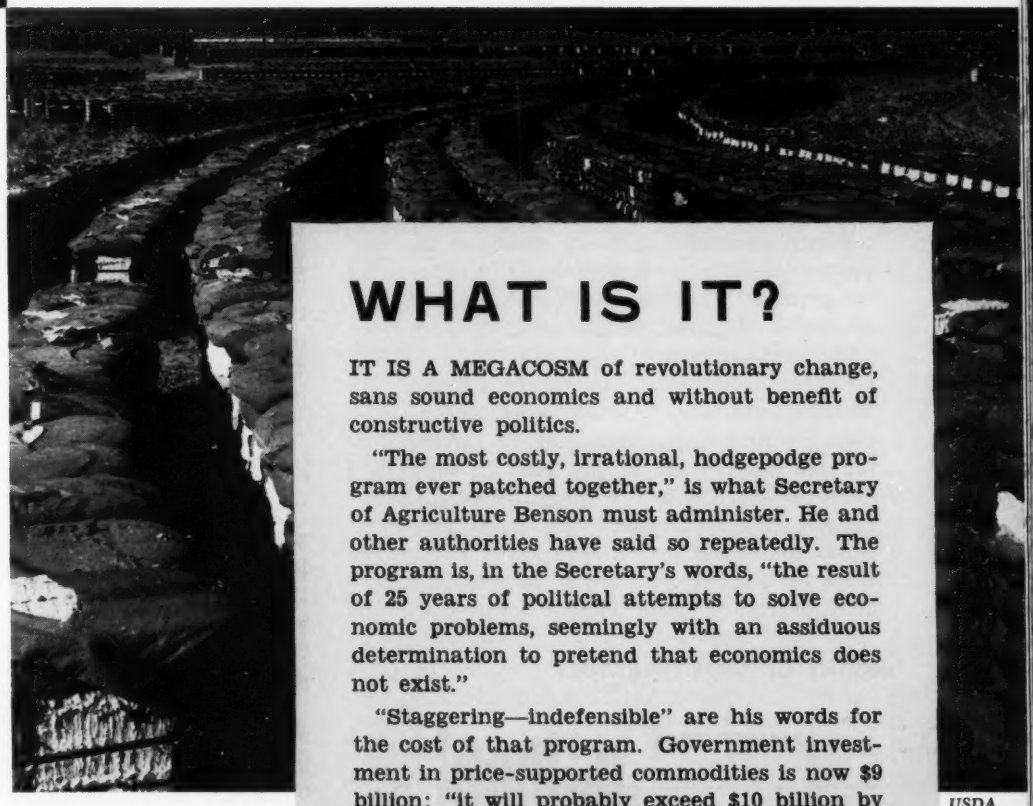


USDA

Farm-science revolution, bypassing outmoded farm programs hinged to 1938, has piled up surpluses of $9.1 billion in wheat and other commodities. Much has been shipped overseas to further world peace.

OUR U. S. FARM PROBLEM—



Backed-up cotton, priced out of world market, is product of program costing $2.8 billion for the stabilization of price and income, from 1932-1958.

USDA

WHAT IS IT?

IT IS A MEGACOSM of revolutionary change, sans sound economics and without benefit of constructive politics.

"The most costly, irrational, hodgepodge program ever patched together," is what Secretary of Agriculture Benson must administer. He and other authorities have said so repeatedly. The program is, in the Secretary's words, "the result of 25 years of political attempts to solve economic problems, seemingly with an assiduous determination to pretend that economics does not exist."

"Staggering—indefensible" are his words for the cost of that program. Government investment in price-supported commodities is now $9 billion; "it will probably exceed $10 billion by the end of the next fiscal year." We now have by far the greatest wheat surplus in all history; we have spread the wheat belt all over America . . . We have the best quality tobacco in the world, but we have been pricing ourselves out of export markets . . . Farmers are producing more peanuts than consumers will buy at the prices *mandatorily supported* under the old obsolete laws.

Farmers, themselves, recognize that the old basic crop legislation, still on the books, is outmoded and fails of its objective. In one recent national poll, 55 per cent of farmers voted for

"no supports, no controls, no floors, free market prices; get the government clear out."

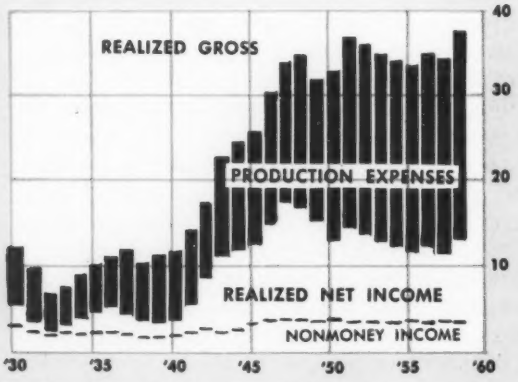
The administrative branch of government seems ready. Secretary Benson has pointed out: "The old order has placed bureaucratic controls on farmers, destroyed markets, piled up surpluses and imposed heavy burdens on taxpayers. It does not fit the needs of our small farmers comprising 56 per cent of all our farms."

But the opposition to change has been almost unbelievable. Again Secretary Benson: "Congress has never permitted the program of the Department of Agriculture to become effective. Our program has never really been tried . . . This is destructive politics in action." Why? Too many special interests . . . regional and factional jealousies . . . product rivalry—oleo vs. butter; pork vs. beef vs. lamb vs. poultry . . . "family farm" vs. commercial agriculture . . . and just plain demagoguery. "Both parties share responsibility for the situation in which we now find ourselves . . . Our farm laws must be changed to cope with current conditions."

Every business and every citizen is involved—directly or indirectly. Insurance, for example: There are total assets of $190 billion to be protected in the U. S. agricultural plant today.

Current conditions, the changes which brought them about, and changes still to come are here discussed in a special article for *Journal* readers by Dr. Earl L. Butz, Dean of Agriculture, Purdue University. Farm born, farm reared and farm dedicated, he served for three years, 1954-57, while on leave from Purdue, as Assistant U. S. Secretary of Agriculture.

INCOME OF FARM OPERATORS BIL. $



Net farm income is down from 1946-53 owing to cost-price squeeze worsened by inflation in production-expense items.

LOOK QUICKLY! AGRICULTURE IS CHANGING

By Dr. Earl L. Butz

DURING THE NEXT DECADE, we shall have ringside seats to scientific and technological developments our fathers would have labored over for a whole generation.

That's change at the modern-day pace—the law of progress.

Today the agricultural revolution is advancing with such rapidity that farm families and rural communities often find it hard to make the required economic and sociological adjustments. This is equally true for agricultural business and for the businesses serving agriculture, such as insurance.

Growth is always painful. The present adjustment is no exception. It is not easy for farm families to change their methods of production, their scale of operation, or even to shift vocation. The anguished farm mother says, "We slaved and saved all our lives to own this farm clear for ourselves and our children; it would break our hearts if they had to leave." That's parents-living-their-children's-lives at its worst.

1 *Capital Requirements Growing*

True, it is more difficult for a farm family to shift vocations than for an individual worker. But farm sons and daughters, as well as farmers themselves, have been shifting to non-farm vocations for generations. That's how industrial America grew. Only the rapidity of the present shift is new.

The impact of these agricultural developments on farming itself, on community life, on food processing and distribution, and on other business related to agriculture is tremendous.

Take insurance as an example. Today insurance is being called upon to underwrite a new type of agriculture with as much as $50,000 to $100,000 invested per worker. Frankly, most of our farmers don't carry sufficient insurance. Their inventory values have gone up so steeply the past 10 or 15 years that they simply haven't kept up with the insurance coverage. This also goes for life insurance.

Therein is the first big impact of these technological changes in American agriculture:

Capital requirements for agriculture will grow in total, per farm and per man. This trend has been particularly pronounced during the past two decades. Its continuance is inevitable.

Our agricultural plant now has record high total assets of about $190 billion. About 89 per cent of this represents owners' equities. Total debt is now around $20 billion, or about 11 per cent of total assets. This is a conservative figure, and is probably a healthy minimum, considering the necessity to refinance most farms each generation when ownership changes to younger hands.

Total investment per farm in the U. S. now averages $36,000. This includes a lot of small part-time or subsistence farms. Investment per commercial farm is much higher. It is not uncommon for family commercial farms in the Corn Belt, for example, to have a total capital investment in excess of $100,000—in some cases $200,000.

Investment per worker is growing rapidly. Only 15 years ago, the average U. S. farm had about $3,500 invested in land and equipment for each farm worker. Today that figure is more than $15,000 per worker. On many commercial family farms the investment per worker runs up to $50,000 or higher. This compares with an average investment per industrial worker of around $14,000.

This means it takes three or four times as much capital investment to create one agricultural job on many of our family commercial farms as it does to create a typical industrial job in our cities.

As agricultural science continues to advance, it is inevitable that the business units in agriculture will get bigger and bigger with still larger amounts of capital required. This trend cannot be stopped. Nor should it be. We must adjust our farm institutions and our farm programs to it so as to capture such benefits as will flow from it.

Machines will continue to displace men on our farms. We will produce more with fewer farms and with fewer workers than at present.

2 *Number of Farms Is Decreasing*

The second big impact is: The number of farms will decrease.

We now have about 4.6 million farm units in the United States. Slightly less than 2 million of these are what we commonly call commercial family farms. The remainder are, in effect, part time or quasi-subsistence farms. They add relatively little to the commercial flow of food and fiber. Indeed, the top 2 million of our farms produce approximately 90 per cent of all food and fiber entering into commercial trade.

The other 2 million plus farm units, although listed in agriculture, are operated by farm people who really need more opportunity to improve their situation either through enlargement of the individual farm business or through additional employment off the farm. Preservation of these farm units is the political demagogues' monomania. But many of the people on these 2 million or more units are so situated that the solution to their problem must ultimately be found outside of agriculture.

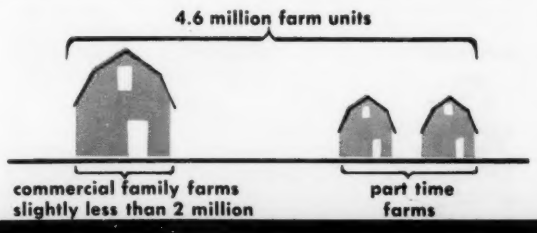
There are some people who simply weren't cut out to be farmers, just as other people don't make successful insurance salesmen, machinists, carpenters or whatever.

Low Income Farmers Better Off to Move Out

It is just plain coldblooded procedure to attempt through legislative programs to keep such men tied to farms which every one knows are inadequate to provide a decent living for the men and their families. People in other jobs and in other professions take this kind of healthy competition in stride. And they usually improve their lot in life. Many low income farmers can and will do the same if they are given the opportunity, and if the politicians will stay out of their hair.

Unfortunately, there is no prospect that ambitious politicians in Congress will stop demagoging the emotionally explosive family farm issue, any time in the foreseeable future. Fewer farmers, and particularly fewer farmers in the entrepreneurial sense of the word, inevitably mean decreased political power for agriculture. Indeed, that trend has been apparent in recent years, as farm politicians have faced increasing difficulty in holding the Farm Bloc together in Congress.

In many areas of the country, there is a job waiting in industry, a job with good pay, for the farmer who finds that farming is not his long suit. And if his children want to go into engineering, into medicine, into teaching, or into the skilled crafts in the city, they can be sure that a position awaits them when they finish school. There is nothing dishonor-



able about this kind of a vocational shift. It's been taking place ever since the founding of the nation. Without it, our high level of living would have been impossible. We would have been a nation of peasants with each family tied to its small acreage of land. We would have advanced little beyond the current status of major agrarian populations in the Near East and the Far East.

In 1910 we had 32 million people on our farms, representing 35 per cent of our total population. In 1940 we had 30 million people on farms, but only 23 per cent of our population. At the present time the number of people on farms is down to about 21 million, or 11 per cent of our total population. It has been predicted that by 1975, farm population may be around 17 million, or about 7.5 per cent of the total population of around 228 million.

This will mean that production per worker on our farms two decades hence must be more than twice as high as it is now. And it's now twice as high as it was less than two decades ago. This kind of development must inevitably mean higher living standards for those who man our farms and produce our food and fiber.

Insurance Safeguards Will Be More Urgent

These commercial family farms will increasingly take on the characteristics of a business organization. The percentage of gross receipts consumed by production expenses will rise even higher than it is today. For one thing, more insurance will be required to protect the investment and the business. At the present time about 65 cents of each dollar the farmer receives is spent for goods and services required to run his business. This does not include his wages to himself. In earlier periods, expenses consumed less than 50 cents out of the dollar. A decade or two hence expenses will consume more than 65 cents of the dollar. The farm will operate on a narrower margin per unit of output. This means that volume must increase in order to increase profits.

This trend suggests that farms are becoming more like other businesses in that they acquire more and more of their goods and services, rather than having them produced on the farm or consumed there. In a sense, therefore, the farmer becomes the manager of a manufacturing operation as he puts together packages of technology which have been processed on a custom basis by others. One illustration is the integrated poultry broiler industry.

3 *Integration Trend Will Spread*

Thus, the third impact of change in agriculture is: The trend toward integration will spread. Don't be frightened by this; the demagogues in agriculture are using it as one of their most effective hobgoblins.

Political leaders will resist vertical integration in agriculture, through their oratory, in their congressional hearings, and in their legislation. The philosophy of the small, owner-operated family farm is deeply ingrained in our sociological and political mores. The controversy over this issue is often more emotional than economic. Political pressure will continue to be on the side of maintaining the small family farms, even though modern technology dictates strongly that family farms become larger.

Vertical integration is the result of fundamental economic and technological changes occurring in the agricultural industry—it is not the *cause* of them. It is a manifest effort by individual sectors of the agri-business assembly line to survive in the swift competitive current of our modern dynamic food and fiber industry.

Certainly, it is reshaping the traditional pattern of owner-manager-operator all contained in a single person. This reshaping is the very basis of much of today's social and political unrest in agriculture. But the wave of the future in integration is rolling and swelling. We will need to study the organization of our production units carefully and steer our farm policy course wisely in order both to minimize the adverse impacts and to maximize the favorable aspects of this development. I leave the insurance implications—and there are many—to the farm underwriters.

4 *City, Farm Will "Rurbanize"*

Fourth of the impacts: Our countryside will be "rurbanized." A transformation is taking place which is changing the thinking and actions of a vast segment of our population. The "country hick" and the "city slicker" have virtually disappeared as prototypes on the American scene. The line of demarcation between people living in rural areas and those in urban areas is fast becoming obliterated. Modern science and technology have made it possible for the city to move to the country

and for the country to move to the city. There is no longer a farm population and an industrial population, especially within 40 or 50 miles driving distance of our big industrial centers, and that includes practically the whole eastern and central sections of the country.

Only in recent years has this "rurbanization" come to the fore as a powerful influence reflecting a great change taking place in our way of life. A new agriculture in America is emerging with breathtaking rapidity. It is time, indeed, to look quickly. The transformation is taking place so quickly that we are experiencing great difficulty in adjusting to it economically, sociologically, and politically.

For many years in our city communities the doctor has lived beside the lawyer, beside the machine operator, beside the bricklayer, beside the school teacher, and each has lost his vocational identity as a member of his community.

So it will be with the commercial farmers in the newly "rurbanized" communities. The farmer-businessman will live beside the urban businessman, the urban industrial worker, and the urban professional man. Ultimately they will lose their vocational identity as members of the community. At this point, farming will no longer be a "way of life," but will be a "way of making a living," just the same as other business enterprises.

5 *Agriculture Expanding Swiftly*

Here's a fifth and last impact: Agriculture is an expanding industry. It is an expanding industry in every respect except one: the number of people required to run our farms. Only in this single respect can it be said that agriculture is a "declining" industry.

Our agricultural plant uses each year more capital, more science and technology, more managerial capacity, more purchased production units, and more science and research than the year before. What's "declining" about that?

The declining trend in farm population, although demagoged to death by some politicians and rural fundamentalists, is in itself a sign of a strong agriculture. This is the age of science and technology. Brainpower has replaced horsepower and musclepower as the central ingredient of success on our farms.

Total capital and capital per worker in agriculture, as has been pointed out, greatly exceeds that in American industry. Total capital assets on our farms now exceed $190 billion. Add to this the investment in agricultural businesses and the total assets in what has commonly come to be called "agri-business" exceed the total industrial assets in America.

For every 100 workers on American farms, there are approximately 90 more workers engaged in supplying farmers with goods and services used in production and approximately 100 other workers engaged in processing and marketing the food and fiber produced on our farms. This entire group comprises approximately 37 per cent of our labor force.

The farm plant in America purchases approximately $17 billion worth of goods and services used in farm production. To this it adds a value of about $18 billion, which means that total farm produce leaves the farm gates at about $35 billion. Processing and distribution add another $45 billion to this, which makes a total value of output in agri-business of approximately $80 billion a year.

In contrast to 40 or 50 years ago, when farmers were producing most of their own fuel, power, materials, fertilizer and protection, industry is now furnishing farmers each year:

291 million premium-dollars' worth of insurance on motor vehicles, machinery and implements.

6½ million tons of finished steel—more than is used for a year's production of passenger automobiles.

45 million tons of chemical materials—nearly five times the amount used in 1935.

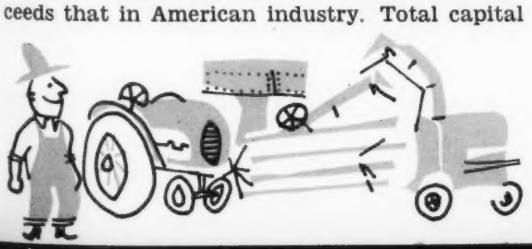
17½ billion gallons of crude petroleum—more than is used by any other industry.

285 million pounds of raw rubber—enough to make tires for 6 million automobiles.

22 billion kilowatt hours of electrical power—more than enough to serve the cities of Chicago, Detroit, Baltimore and Houston for a year.

Thus, whatever happens to agriculture has a direct and major impact upon industry.

Plenty will be happening—and swiftly. Be assured of that. Agriculture is right in the middle of the scientific explosion of our times. If we can keep our economy free and preserve an environment in which individual producers and scientists are free to dream a little about new techniques and new ideas, and to enjoy the fruits of their dreams, we shall experience phenomenal progress in the next generation. The watchwords for insurance and for every other co-partner of agriculture are, indeed: Look quickly; watch closely. ⊙



New feats in desalting
promise oceans of fresh water for shortages.

FINIS TO WATER-FAMINE FEARS?

THANKS TO MODERN SCIENCE and engineering, an age-old dream of man—the large-scale conversion of sea water into a pure, fresh, literally inexhaustible new water supply—is now in the realm of reality.

Secretary of the Interior Fred A. Seaton has announced the "remarkable breakthrough" achieved by a water desalting pilot plant at Harbor Island, North Carolina, after two years of research. Its success marks an optimistic beginning for a $10 million federal program which will erect five full-scale demonstration plants to apply methods believed feasible for conversion of saline and brackish water.

The need for such a program is critical, for many parts of the world, including our own, are figuratively just buckets away from a water shortage of famine proportions. Even in many non-arid areas of the resource-rich U. S., it is just a matter of a decade or two before fresh water supplies will be woefully inadequate, if not completely exhausted.

This country aleady is using almost every last drop that can be siphoned or scooped from its lakes, rivers and underground reservoirs—20-odd billion gallons a day, or 150 gallons for every man, woman and child in the nation. By 1980, experts warn, U. S. water requirements may increase as much as 250 per cent as the population hits an estimated 250 million, with a record number of bathrooms, air conditioners, appliances and other water-consuming conveniences. More water also will be needed for expanded industry, agriculture, recreational facilities, fire fighting. (Experts estimate U. S. fire potential will double within 40 years.)

Some water can be obtained by careful conservation and control of existing supplies. As one example, some 1,000 U. S. cities have been forced to ration water in the past five years, mainly for summer lawn sprinkling. But this is not enough. New water sources must be found.

This is where the U. S. Saline Water Conversion Program, begun in 1952, creates such hope. The $328,000 Harbor Island pilot plant, operating since November 1957, has proved the possibility of desalting a million gallons of water a day by a long-tube vertical distillation process (LTV). The two main technological barriers to widespread use of LTV were hurdled: formation of scale on the pipes, and corrosion caused by salt water.

There now is "reason to hope" that a full-size LTV plant can convert water for less than $1 per 1,000 gallons, Seaton said—50 per cent less than the most efficient commercial conversion plant in the world today (used mainly by salt and chemical manufacturers), and far below the $2 to $5 cost estimated in 1952. Further research may cut it to 25 to 40 cents per 1,000 gallons. Household water bills now average 30 cents per 1,000 gallons.

Three of the five demonstration plants to be erected will be on the country's salt-water sea coasts, the Atlantic, Pacific and Gulf of Mexico, where 65 per cent of U. S. industry and 55 per cent of the population are concentrated. Two 250,000-gallon-a-day plants for conversion of brackish water will be inland, one in the arid Southwest, one in the northern Great Plains. More than 80 cities have bid for the plants.

One plant will demonstrate the LTV method in full scale. Methods to be tested in the other four will be chosen from among about 17 promising possibilities. Some of them, like LTV, are multiple effect methods, producing electric power and possibly other byproducts as well as fresh water.

Besides LTV, the leading methods include:
¶ Other kinds of distillation, including solar,

Two views *(above, and left, below)* of the long-tube vertical distillation (LTV) pilot plant for desalting water, at Harbor Island, North Carolina. Saline water is forced through evaporators and heated until salt crystals precipitate. Equipment at right, below, is for another of 17 desalting methods in tests.

nuclear heat, vapor compression and multistage flash distillation.

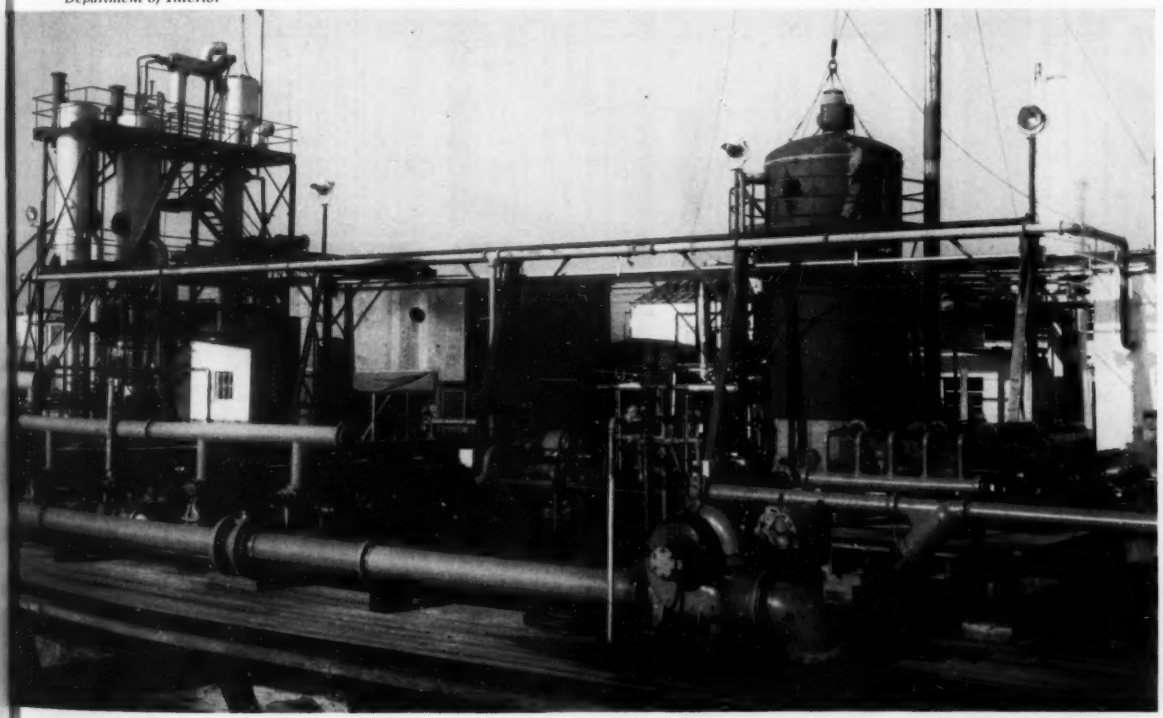
¶ Membrane processes. These involve use of plastic, cellulose acetate or other membranes, still not perfected, to trap mineral ions in saline or brackish water, either by electrical attraction or by a sort of selective osmosis process. "Biological membranes" of algae also are being tried; more than 100 types have been cultured and tested for salt absorption ability.

¶ Freezing.

¶ Other electric and chemical methods.

The possibilities are almost as numerous as the researchers working on them—public and private, all over the world. Such efforts as the UNESCO Advisory Committee on Arid Zone Research or the Symposium on Salinity Problems in Arid Lands, held in Iran last October, draw worldwide participation—Morocco, Japan, Australia, Yugoslavia, Israel, Russia, Italy, the U. S., the Netherlands, to give a few examples. Nothing could more forcefully substantiate the concern, even alarm, aroused by the specter of water famine around the world. Nor could anything offer more hope that, with the new U. S. program in the vanguard, solutions may be found before it is too late. ⊙

Department of Interior

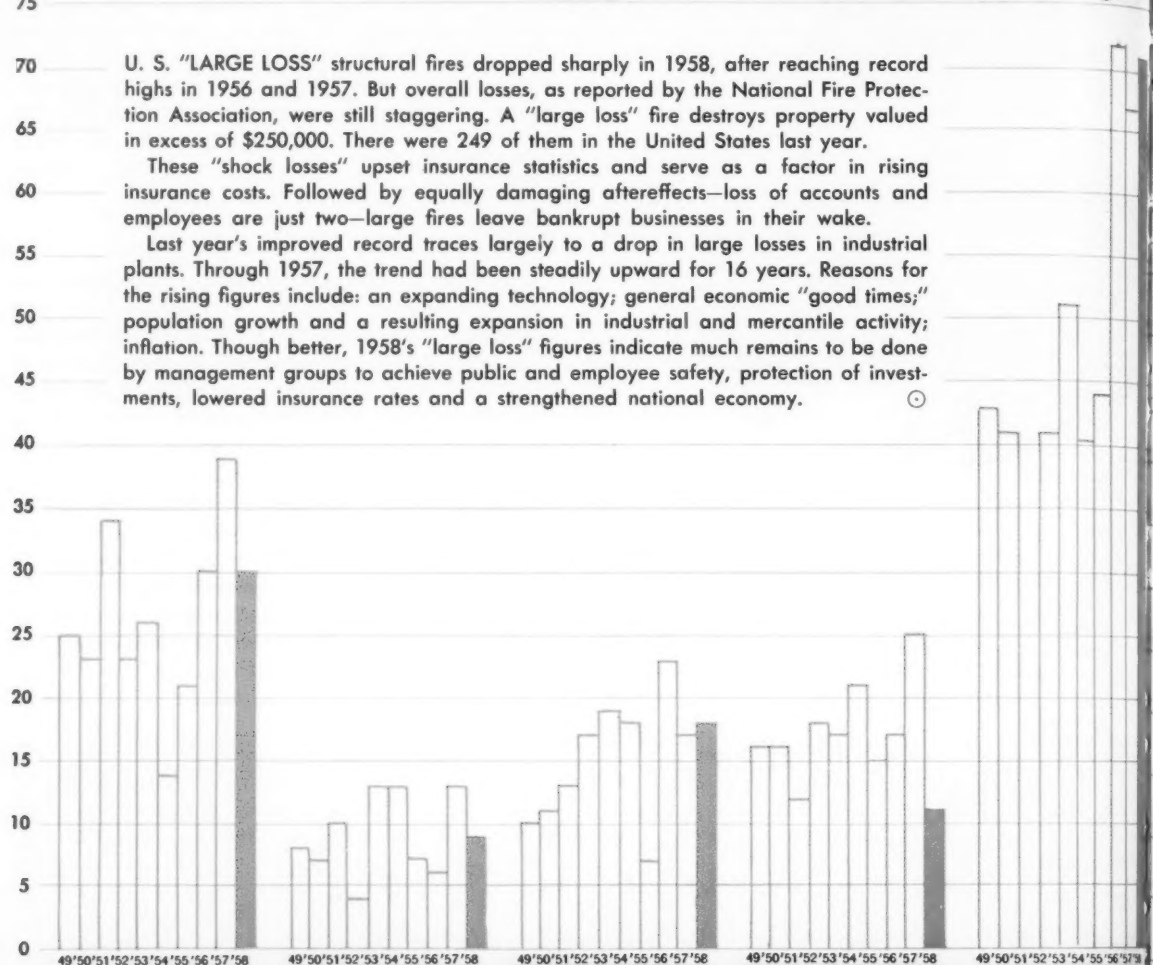


U. S. LARGE LOSS —New Ten-Year Summary

U. S. "LARGE LOSS" structural fires dropped sharply in 1958, after reaching record highs in 1956 and 1957. But overall losses, as reported by the National Fire Protection Association, were still staggering. A "large loss" fire destroys property valued in excess of $250,000. There were 249 of them in the United States last year.

These "shock losses" upset insurance statistics and serve as a factor in rising insurance costs. Followed by equally damaging aftereffects—loss of accounts and employees are just two—large fires leave bankrupt businesses in their wake.

Last year's improved record traces largely to a drop in large losses in industrial plants. Through 1957, the trend had been steadily upward for 16 years. Reasons for the rising figures include: an expanding technology; general economic "good times;" population growth and a resulting expansion in industrial and mercantile activity; inflation. Though better, 1958's "large loss" figures indicate much remains to be done by management groups to achieve public and employee safety, protection of investments, lowered insurance rates and a strengthened national economy. ⊙



An incinerator door left open led to a $485,000 damage toll in an unsprinklered business block in Baker, Oregon, in '58. Toll included: furniture and drug stores, the bank.

National Fire Protection Association

With no organized fire department, little water and no sprinklers, Fenn, Idaho, lost a grain warehouse, two boxcars and the town community hall in few hours of fierce fire last fall.

National Fire Protection Association

Six tank-car explosions hurled tanks several hundred feet, cracked walls 10 blocks off, when 31-car '58 wreck caused quarter-million dollar Shattuck, Oklahoma, large loss fire.

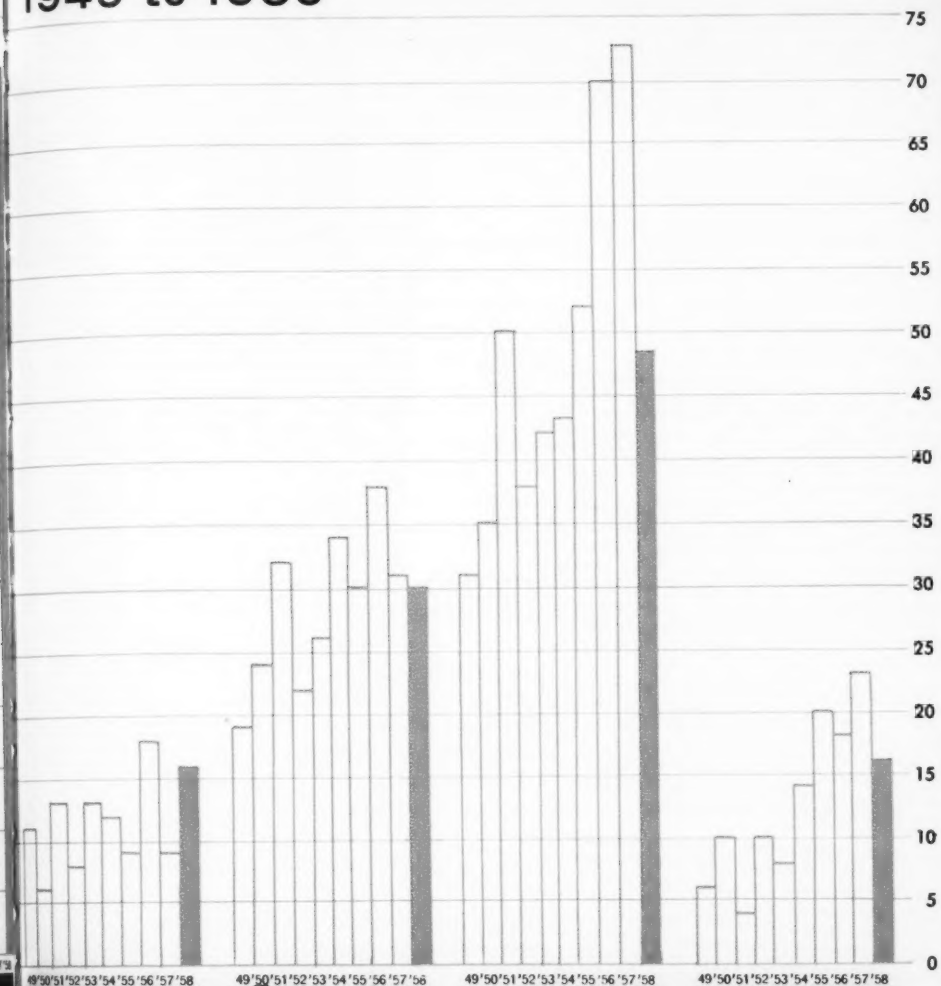
National Fire Protection Association

A freight-car derailment led to tank car explosion and $500,000 loss not far from Merriam, Kansas, last July. Sight-seers blocking road and long pumper relays slowed fire-fight.

Wide World

Four churches, 16 schools and two public buildings fell to big fires in '58. Galesburg, Illinois, library fire cost $650,000. Fire-resistive vault saved some valuable treasured papers.

STRUCTURAL FIRES
1949 to 1959



East S. Central States—
Alabama
Kentucky
Mississippi
Tennessee

Inadequate water supply, lack of automatic sprinklers and poorly maintained private fire fighting equipment contributed to $410,000 '58 loss in this flour mill blaze in Tennessee.

Wide World

South Atlantic States—
Delaware
Dist. of Col.
Florida
Georgia
Maryland
N. Carolina
S. Carolina
Virginia
W. Virginia

Only oil-tank large loss of year was $800,000 fire at petroleum storage marine terminal in Newport News, Virginia. Some 200 firemen fought fire triggered by one overfilled tank.

Wide World

Middle Atlantic States—
New Jersey
New York
Pennsylvania

Fewest large loss fires in transportation since 1953 were reported last year. Among 55 recorded: $3½ million holocaust in New York when Constellation rammed into Viscount.

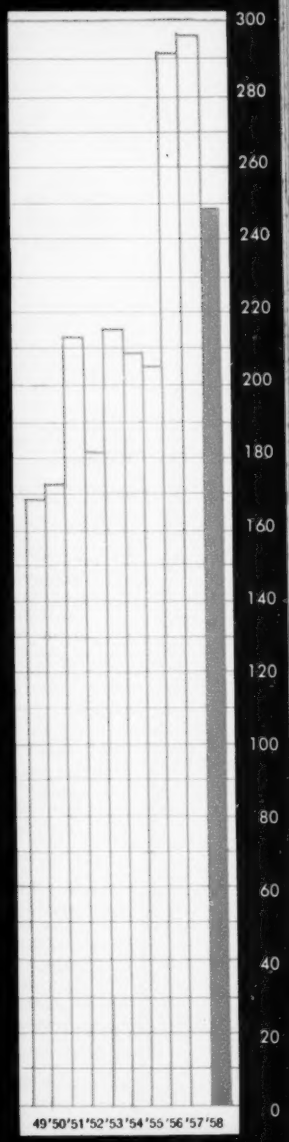
New York Times

New England States—
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

This Gloucester, Massachusetts, summer hotel was empty and unprotected by sprinklers or alarms when destroyed by a $750,000 blaze that also damaged eight nearby buildings.

National Fire Protection Association

TOTAL NUMBER OF STRUCTURAL FIRES IN U.S.



Structural large loss fires in recent years have struck about twice as often in manufacturing locations as in mercantile or storage buildings. Very few are residential. Numbers of fires by occupancy in 1958 and 1957 were: Industrial, 82-114; mercantile, 71-56; storage, 39-48; residential, 6-10.

J. Edgar Hoover on Driver Control

Director Hoover's communication, calling for day-to-day concerted, positive action to reduce the highway accident and death toll, points up the urgency of stricter driver licensing. Denial of drivers' licenses, maximum fines or long jail terms are urged for flagrant and repeating offenders of the code.

United States Department of Justice
Federal Bureau of Investigation
Washington 25, D. C.

January 1, 1959

TO ALL LAW ENFORCEMENT OFFICIALS:

The threshold of the New Year 1959 is an appropriate occasion to launch an all-out attack against the cavalcade of carnage on the roadways of America by the death driver and the flagrant traffic violator. In terms of the terrible toll he exacts, the death driver--with reason and conscience blinded by intoxicants, lust for speed or utter disdain for traffic laws--can indeed be classed as today's Public Enemy No. 1.

Law enforcement officers as well as relatives and friends of victims time and again witness the horrible tragedy of motorists' carelessness, negligence and thoughtlessness. The once lovely child now a mangled body, the pedestrian smashed into an unrecognizable form, the family grotesquely deformed and destroyed in a holocaust of machinery have become almost everyday occurrences. The annual death toll of more than 100 lives a day snuffed out in auto accidents is assuredly an indictment of our national mentality and regard for life.

Across the country, police agencies have taken on added responsibilities and duties in the traffic field, aided immensely by the intelligent cooperation of the Nation's safety organizations. Yet, with the population surging upward and inadequate highway systems being deluged with new, high-powered motor vehicles, the traffic problem continues to grow more complex and intense. The key to the solution lies in the individual motorist and in his attitude toward the privilege of driving a motor vehicle.

Fundamentally, enforcement and safety organizations must initiate and emphasize programs of educating the motoring public to the vital need for respecting the traffic laws of the land. The absurd theory of countless so-called reputable citizens that they are immune from observance of speed limits, stop signs, and traffic lights must be completely abolished. When an unthinking driver recklessly careens down a highway at the wheel of a speeding car, disregarding entirely the rights as well as the property and lives of his fellow men, he is no longer by any stretch of the imagination a reputable citizen.

Drivers who fail or refuse to abide by the traffic code must be dealt with in sterner fashion. In the battle of life and death on the highway, the public interest demands that flagrant and repeating offenders be punished by denial of driver's licenses, maximum fines or long jail terms.

The automobile assassin is a vicious criminal--and he must be treated as the major menace to society that he is. As a fundamental defense against this threat to public welfare, it is essential that in every community traffic codes be strong, enforcement be rigid and impartial, penalties for serious violations be sure and severe. In many States such "crackdown" policies against the criminal actions of motor vehicle operators are in effect. For example, in Connecticut and North Carolina the stringent traffic enforcement programs have achieved both success and wholehearted public acclaim.

The American motoring public must be awakened to the fact that it is killing itself on the roadways of the country. Only a day-to-day program of concerted, positive action can solve this problem and avert the threat of national suicide on the highway.

Very truly yours,

J. Edgar Hoover

John Edgar Hoover
Director

(Reprinted from the FBI Law Enforcement Bulletin, January, 1959)

TOO MANY MISFIT DRIVERS

When do we stop the willy-nilly licensing and re-licensing of these highway hazards?

PROBABLY ONE OUT OF EVERY THREE or four drivers you meet on the highway today never has had a driver examination of any kind. What's more, under the law in some 30 states this operator may drive a lifetime without a test. About all he'll need in order to renew his license will be proof he is still alive!

This driver is one of the estimated 20 to 25 million who got their licenses for an inconsequential fee years ago and still drive on a "good-until-revoked" permit—the "grandfather clause."

But suppose this driver now has bad vision.

Or he's had a stroke, or suffered mental impairment.

Or he's had a heart attack, or is senile.

It doesn't matter. In at least 30 states he can continue to drive by the simple expedient of filling out a blank and, in many cases, dropping it in the mail box. In some states, to be sure, he risks perjury by disclaiming physical deficiencies. But there's no investigation of his real fitness, and no personal appearance is required.

The same appalling situation exists for the 40 to 50 million drivers who have had some type of original examination, but who are allowed to renew their driver's licenses without complete checkup as to vision, physical capabilities, knowledge and driving skill.

Such is the shocking state of our driver renewals today. Incredibly, only a handful of states make even a pretense of re-examination, such as is urged in the insurance industry's Program for Responsibility on Our Highways. And even among these states, the quality of the tests varies greatly. Illinois, for example, requires a driving test—but only for those over 70! Nearly everybody else can apply by mail. In Maine it's age 80! South Dakota only recently began licensing its drivers. Some states have statutory requirements, but administrators of the law fail to enforce its provisions.

Probably only two states provide really full-scale renewal programs complete with tests for vision, rules of the road, traffic signs, and driving. Even these may waive driving tests if warranted. These states are California and North Carolina. Indiana is moving into periodic re-examination.

In all, some 19 states report "some kind" of re-examination. (Any state, of course, can and does re-examine for cause.) But the conditions of re-examination vary widely. In most states, it may be only a vision test—often sketchy. In others it may be a test only after a license has expired or "when needed." A few states test on rules and signs.

Here are the 19 states requiring some form of re-examination: Arizona, California, Colorado, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Michigan, Nevada, New York, North Carolina, Ohio, Oklahoma, Utah, Virginia, Washington, and the District of Columbia.

Most Renewal Testing Done Too Belatedly

The rest of the states report no renewal tests whatsoever. A driver fills out a notarized form and gets a license to drive until something happens and the law catches up with him through his disability or inability, or both. Matter of fact, this is the only way the great majority of our states have of really testing your driving ability at all—when it's too late!

What do the states do in place of full scale, periodic renewal examinations?

Selective re-examination is one alternative. This is calling in a driver for special tests after he has been reported by the police, courts, neighbors or relatives, or he hits the warning score on the point system. (At least twenty-five states now use the point system to detect these violators.) Some states claim they prefer selective re-examination to regular renewal tests.

Here and there a state requires accident-prone drivers to furnish reports of physical fit-

Citizens Traffic Safety Board, Chicago

Tests in Chicago's Psychiatric Institute turn up thousands of autoists unqualified to drive. Yet most states re-license so freely that misfits are never found or else hide their defects.

Too Many Misfit Drivers

ness from their physicians, or reports from their eye doctors. Massachusetts is an example. Once a driver gets his doctor's O.K. in that state he is then given a careful one-hour's competency test in heavy traffic. Other states are trying variations of this checkup.

But the significant thing, after all these years of automobiling, safety engineering and superhighways, and a toll of 1¼ million highway deaths, is that about two-thirds of the states still have no *regular, systematic, renewal program,* and only two or three a complete program. What's the trouble?

The big thing, they say, is money. Even that hasn't blocked some states, notably North Carolina and California. Most states, though, haven't solved the problem of finances.

"There is *no workable* driver re-examination program because of budgetary limitations," declares Clement A. Riley, Massachusetts registrar of motor vehicles. "For example, we have more than 2 million licensed operators in the state. If we re-examined our licensed operators on a ten-year basis, it would be necessary to test 200,000 a year. This would cost approximately $1,500,000 per year and is an impractical suggestion." Riley estimates he would need to boost his examiner force 100 per cent.

Arizona reports likewise: "Our budget does not set up any specific amount to take care of these re-examinations, and in fact our force does not permit a thorough re-examination in all cases. For the most part, our re-examinations of flagrant violators and aged drivers are conducted at the request of police."

From Lt. R. O. Koch, chief license examiner of Washington state, comes this report:

"I don't think an ideal re-examination program is entirely workable. I personally prefer a selective type of re-examination which permits the administrator's use of discretion. Periodic re-examination of everyone should take place only at eight or ten-year intervals."

Koch points out an important "if"—"that a selective program depends on complete reporting of police, courts, medical authorities, institutions, neighbors and relatives—plus personal appearance for renewals." But states can get by on less money.

Florida tells the *Journal:* "Our selective re-examination is very effective, but we do not have adequate funds and personnel to examine all the drivers who come within the purview of the law."

Another reason for the renewal situation is the attitude of the drivers themselves—too often they don't want a good law! Take the case of Massachusetts back in 1936. Enterprising motor vehicle officials attempted to require a driver test for everybody past 65. But they didn't reckon with the legislature, which had a lot of likely candidates in this age bracket! Not only did the legislature kill the renewal test but it prohibited examination of any operator in Massachusetts for age alone. The law's still in force today.

This old bug-a-boo of politics is a major deterrent to re-examination. Many public office holders fear it would be political suicide to require drivers to submit to re-examination at regular intervals.

Administrators Thwarted by Lack of Funds

Finally, there's the attitude of the licensing authorities. One frank official puts it this way: "I believe that we can safely say that many driver license administrators are reluctant to request a renewal program because they feel they won't get enough funds to do a good job, and consequently are afraid to undertake the job."

We lack leadership in driver renewal thinking! Yet a few states are undertaking the job, notably California.

Just 30 years ago, the California legislature

called in all the "grandfather clause" permits. Licenses were to be renewed every two years and the state had power to require a renewal examination as complete as the original. Later, the two year period was stretched to four, and today the California law provides for a three-year license on an original application and a five-year "incentive" license on renewal. Drivers get the five-year license as a kind of reward for a good driving record. On the other hand, anyone with two traffic convictions in two years preceding his test is restricted to a two-year license.

California Program Cited for Excellence

"Since 1929 California has *regularly examined all applicants,* either original or renewal," says Fred P. Williams, chief of the drivers' license division. "The only deviation comes in the road test, which we waive in possibly 80 per cent of the renewal examinations. We leave this to the field examiner. We always test vision and for knowledge of traffic laws."

In addition, California runs a rugged re-examination program for all those problem drivers who must be called in before their renewal date. These are the operators with poor driving records, physical and mental disabilities, and who are accident-prone. Last year the division interviewed or held hearings for an amazing 50,000 drivers, endeavoring to help them find the causes of their problems and do something about them. Highly skilled driver improvement analysts handled these cases.

In much the same way, North Carolina tackled its driver renewal program in 1947—and with amazing results. Traffic experts say North Carolina has probably made the most progress of any state in this period.

North Carolina requires a complete renewal examination—vision, rules of the road, signs, and driving test—every four years. Some 161 examiners process about 400,000 drivers a year. One year, the operation accounted for 160,000 failures in some phase of the examination. Some of them returned and later passed their tests. Probably 20,000 of these failures, however, were kept off the streets and highways. Their main deficiencies were vision, age, physical handicaps, mental incompetence, heart trouble and diabetes.

The North Carolina program is self-supporting—72 cents of each license dollar goes to highway safety—and costs under $1,500,000 a year.

"We would certainly recommend a re-examination program to the other 49 states," says Director Elton R. Peele.

But, as of now, sound driver license renewal is still in the beginning stages in the United States, and we have a long way to go. States such as North Carolina and California have demonstrated that the job can be done, money, politics and other deterrents notwithstanding. Capt. C. W. Keith, chief examiner of the Florida department, pretty well sums up the future:

"The states are making considerable progress in enforcing the traffic laws. If they are going to make this much effort in enforcement, they should certainly be looking to the drivers' license authorities for a complete re-examination program. It would have three-fold value: Familiarize the general public with the traffic laws, correct many physical deficiencies, such as bad vision, and eliminate the unfit from our streets and highways. Until we do this we will never have a safety program in the United States of which we can be proud." ⊙

PERIODIC RE-EXAMINATION—
No Exceptions!

THERE ARE ABOUT 80 million licensed drivers in the U. S. Some 1,200,000 of them are 75 years old or older; 5,400,000 of them are 65 or older. No one knows the number of drivers with unfavorable medical reports, or with physical infirmities, nor the number of flagrant and repeating offenders of the traffic code cited by FBI Director Hoover in his letter reproduced in this article.

***Periodic re-examination of all drivers should be required,* according to recommendations in the insurance industry's Program for Responsibility on Our Highways.**

"Such provision should not alter the right of a state commissioner of motor vehicles to require re-examination of any driver at any time when, in his opinion, the accident or violations record of that driver warrants such re-examination.

"Statutory provisions should be made for re-examination of:

"Drivers accumulating a specific number of points under the point system;

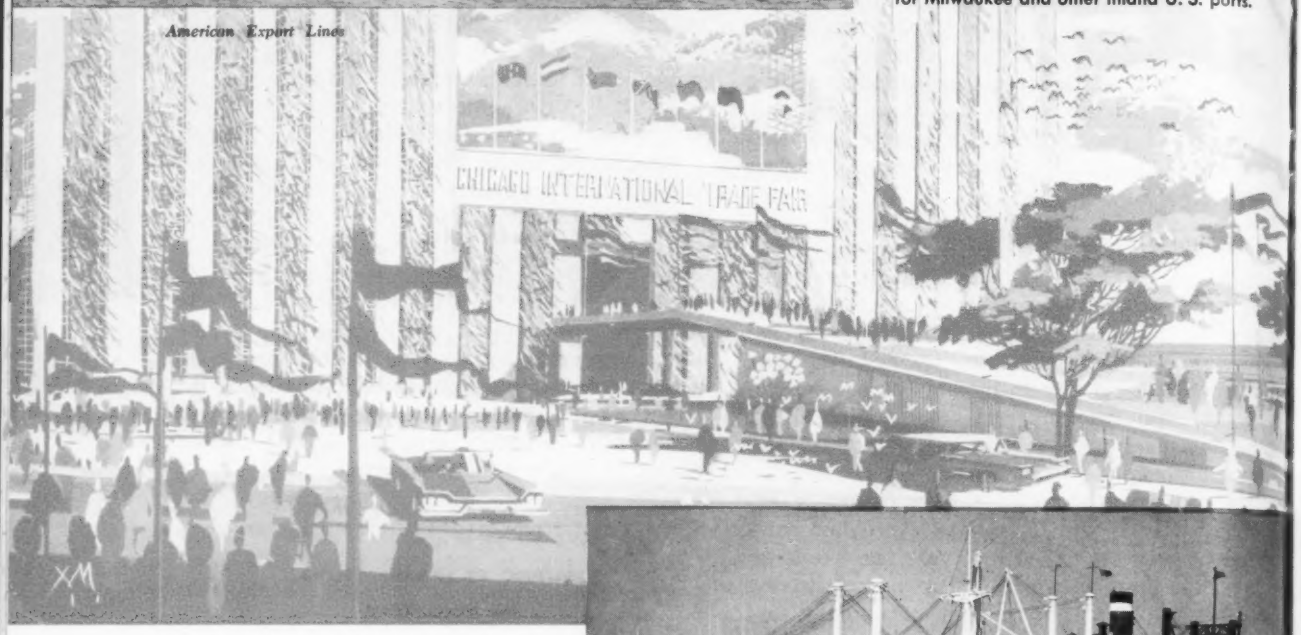
"Drivers with a record of two or more moving hazardous violations, in states which do not have a point system;

"All drivers 65 years of age and older.

"Driver clinics should be established by motor vehicle departments and are recommended to the consideration of traffic courts. When there is evidence of the probability of driver improvement through education, such rehabilitation is the objective of these clinics."

American Export Lines

Round trip service between the Mediterranean and the Great Lakes was begun on March 27, when Extavia left Naples, Italy, for Milwaukee and other inland U. S. ports.

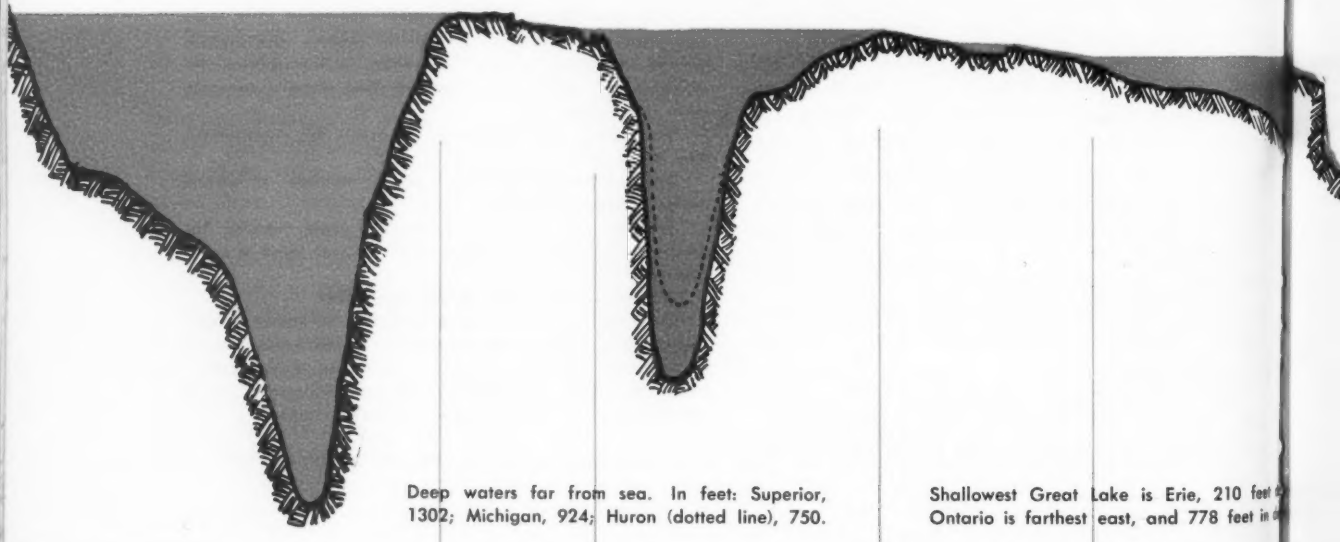


Chicago Association of Commerce and Industry

Official Seaway opening celebration is the Chicago International Trade Fair, July 3-18, with 30 nations represented by goods of 400 exhibitors.

First contract for American flag-service on a Great Lakes foreign trade route was awarded to Grace Line for Latin American ports of call.

Grace Line



Deep waters far from sea. In feet: Superior, 1302; Michigan, 924; Huron (dotted line), 750.

Shallowest Great Lake is Erie, 210 feet
Ontario is farthest east, and 778 feet in

LAKE SUPERIOR | ST. MARY'S RIVER | LAKE MICHIGAN-HURON | ST. CLAIR AND DETROIT RIVERS | LAKE ERIE | NIAGARA RI

HIGH TIDE IN WORLD TRADE

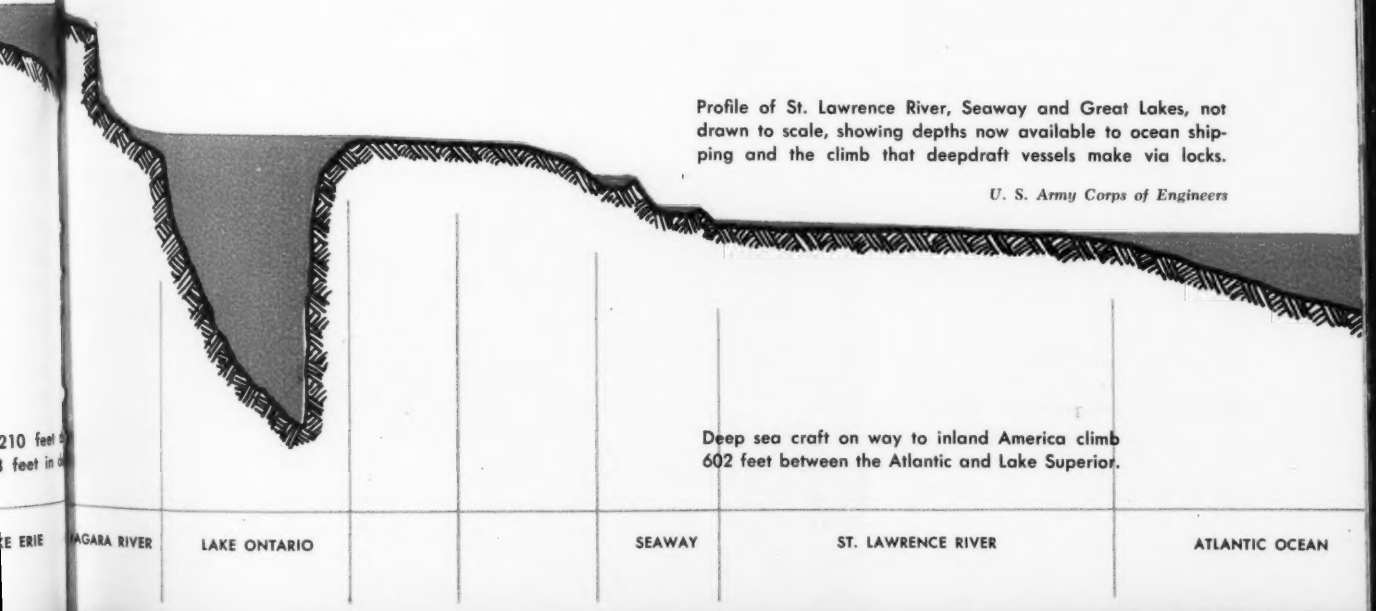
Opening of the St. Lawrence Seaway

UNLESS THE FAR SIDE of the moon offers unexpected surprises, spacemen may find their efforts have fallen short of matching the economic significance of man's current globe-spanning triumph—the St. Lawrence Seaway.

Whatever the moon's vaunted military potential may be, the opening of America's industrial and agricultural heartland to the deepdraft shipping of the world may strike a telling blow itself in the cause of peace. The timing is momentous. Russia is embarked on a self-acclaimed economic war on the free world. In checkmate, the Seaway opens as a reinforcement to North America's economic strength and a force for better understanding through freer commercial exchange between the peoples of inland America and nations abroad.

Great Lakes ports are now open to nearly 90 per cent of the world's shipping via the Seaway; vast, if gradual, inland economic growth lies ahead. Substantial diversion of foreign traffic from East Coast and Gulf ports to cities along the St. Lawrence and on the Great Lakes is forthcoming. Insurance men, anticipating the Seaway's effect, have estimated this rerouting may involve as much as $3 bililon in

Continued on Page 18

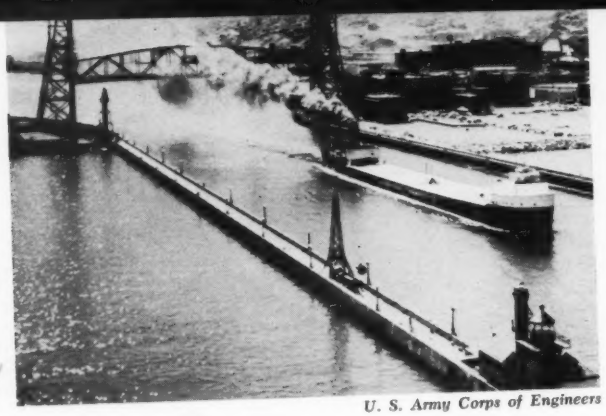


Profile of St. Lawrence River, Seaway and Great Lakes, not drawn to scale, showing depths now available to ocean shipping and the climb that deepdraft vessels make via locks.

U. S. Army Corps of Engineers

Deep sea craft on way to inland America climb 602 feet between the Atlantic and Lake Superior.

High Tide In World Trade



Duluth. The Seaway will bring important savings in shipping grain, says the Department of Agriculture; on wheat, Duluth-Rotterdam, 17c per bushel.

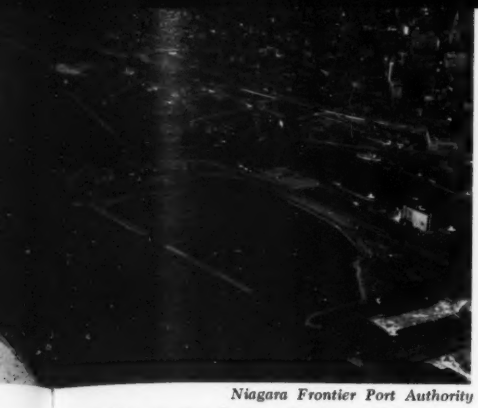
U. S. Army Corps of Engineers

Clair J. Wilson

Milwaukee. Some 2000 sailing miles from and 578 feet above the Atlantic, the Outer Harbor drew only small ocean vessels before new Seaway opened.

Chicago. With barge traffic growing, the Cal-Sag channel linking Lake Michigan to Gulf via Illinois Waterway and Mississippi is being widened 165 feet.

U. S. Army Corps of Engineers



Niagara Frontier Port Authority

Buffalo. Further harbor development has been recommended by Army's Corps of Engineers in one of 15 studies favoring additional expansion of key ports in Seaway-Great Lakes waterway.

While world population is increasing 45 million people a year, the population center of the U. S. is moving steadily west and north. The Seaway connects tomorrow's significant, far-spread trade centers.

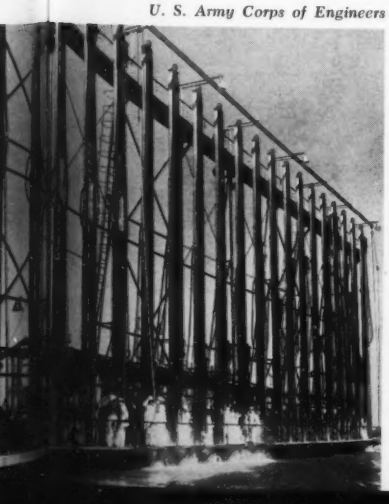
St. Lawrence Seaway Development Corporation

Dwight D. Eisenhower Lock. Near Massena, New York, one of two major locks built by U. S. in billion dollar waterway and power project with Canada's help.

U. S. Army Corps of Engineers

Detroit. Widening of Great Lakes connecting channels, such as Amherstburg channel between Erie and Huron, required unique underwater blasting rigs.

U. S. Army Corps of Engineers



A major new route for economic exchange between mid-America and Europe, Africa, South America and even Asia, the St. Lawrence Seaway will draw trade from some 17 states containing 130,000 farms and almost half the U. S. population.

foreign trade with a potential in ocean marine insurance premiums of $5 million annually, reports Charles T. Burney, of the Transportation Insurance Rating Bureau.

Chicago Expansion of $10 Billion Foreseen

Outgoing traffic patterns will be similarly affected. One example: exports through Chicago alone will be double the 1956 volume by 1965, according to a special study made by the Chicago Association of Commerce and Industry. Parallel to this exporting boom, the Association's chief executive officer, Thomas Coulter, sees $10 billion in new industrial investments in the Windy City area in the next 15 years, along with the creation of almost one million new jobs. Some 3,500 of those new positions, says Coulter, will stem from expanded marine insurance activities.

Putting Great Lakes ports on international shipping agendas has been an immense project reaching far beyond taming the beautiful, rugged stretch of the St. Lawrence River between Montreal and Lake Ontario. The American end of the joint U. S.-Canadian undertaking, directed by the Army's Corps of Engineers, has been a three-way challenge. First: Seaway construction on 40-odd miles of the St. Lawrence River (notably the Eisenhower and Snell locks). Second: Deepening the connecting channels between the Great Lakes, in itself a costlier job than the American work on the Seaway ($146 million as against $135 million). Third: Broadening Chicago's Cal-Sag channel linking Lake Michigan and the world with the Illinois Waterway, the Mississippi basin and the Gulf of Mexico, to the tune of some $200 million.

N. W. Ayer & Son, Inc.

Queen Elizabeth will wear some of famed British crown jewels on North American tour. Collection of some 60 pieces is the most valuable in Europe.

SOVEREIGN ON THE SEAWAY

NOTHING BETTER SYMBOLIZES our one-small-world and the changes in political and economic climates than the forthcoming voyage of Queen Elizabeth II through the St. Lawrence Seaway into Chicago.

Amidst a July 6 fanfare of good will and freer commerce, she will be the first reigning British monarch ever to visit the city. It was 167 years ago this summer that Thomas Pinckney, first U. S. minister to England, on instructions from President Washington, was expressing "that spirit of sincere friendship, which we bear to the English nation" and also seeking liberation of American commerce from British restrictions.

The queen's visit, with husband Prince Philip, will follow her dedication of the Seaway, with President Eisenhower, in Canada, June 26.

A giant fourth step being taken by the Corps of Engineers is a five-year study of the economic and engineering potential of 40 Great Lakes ports. To be completed in 1962, the study has produced 15 interim reports so far, without exception in favor of additional development totaling some $65 million.

Of broad economic importance in itself has been the collateral development occasioned by the Seaway project. In this respect, Seaway observer F. A. Aiken, of the Inland Marine Insurance Bureau, points to the relocation of railroads and highways, the building of hydroelectric plants and construction of dams and bridges, all of which have occasioned important employment and investment activities as well as considerable insurance services.

Looking ahead at the Seaway's influence on insurance, Aiken suggests as one trend a reduced need for combinations of inland and ocean marine policies to protect overseas shipments transferred between Lake vessels and ocean-going steamers. Direct Seaway transit by larger ships between Cleveland and Europe, say, can henceforth be covered entirely by ocean cargo insurance. And Carl E. McDowell, executive vice president of the American Institute of Marine Underwriters, sees another trend coming in the movement of marine underwriting activity westward as total trade originating inland increases.

Safety Record Near Perfect Despite Risks

Throughout the Seaway's construction, one point of particular satisfaction to all insurance men has been the safety record. Sustained attention by contractors, insurance representatives, the Corps of Engineers and Seaway authorities resulted in an accident rate less than half the average for the heavy construction industry. F. W. Braun, vice president of Employers Mutual of Wausau, the Wisconsin firm that insured 90 per cent of the U. S. work on the Seaway, reports that only three fatalities occurred on a total volume of construction that by past experience could have been expected to claim well over 100 lives.

Now completed, the Seaway offers a range of benefits not yet fully comprehended, says St. Lawrence Seaway Development Corporation Chief Lewis G. Castle. But the Seaway signals, as surely as the moon portends the tides, a high tide in world trade for North Central America and its international neighbors. ⊙

BLONDIN, NIAGARA HERO, A SPACEMAN'S SPACEMAN

IF ORBITING THE EARTH at an altitude of 100 to 150 miles in the first manned-satellite flight seems impossible for one of the seven recently selected spacemen, the answer is that the "impossible" was done 100 years ago.

Blondin, the Hero of Niagara, did it a century ago this June 30 when he literally tripped across the fearsome gorge of the Niagara River about a mile below the falls on a slender 2-inch rope cable, 1,300 feet long, stretched 190 feet above the dizzying, boiling vortex. He did it in 17½ minutes before a carnival crowd of between 5,000 and 10,000 people.

In a death-defying display of coolness and utter lack of fear, he crossed back that same afternoon to the American side.

For repeat performances of the awesome stunt, he added every conceivable risk and antic—night or day, backwards, body-shackled, feet in baskets, head-sacked, man-on-back, and even did headstands and somersaults. He was, indeed, a spaceman's spaceman. ⊙

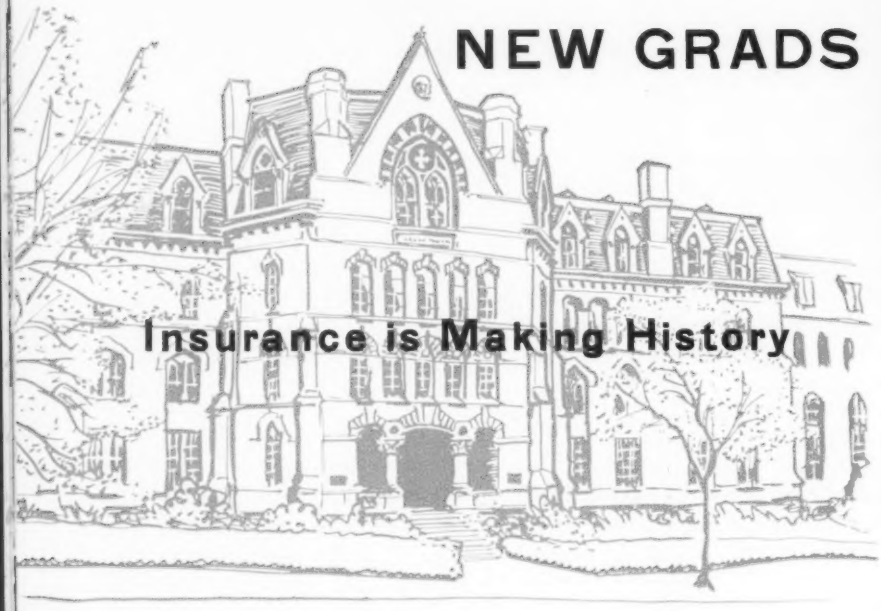
OLD GRADS—

NEW GRADS

Insurance is Making History

University of Pennsylvania

Dr. S. S. Huebner, called the "dean of insurance education" in the U.S. He originated and taught first class in insurance at University of Pennsylvania.



Logan Hall on Pennsylvania campus, home of Wharton School of Finance and Commerce until 1952. Dr. Huebner taught 48 of his 49 active teaching years here.

IN THE SPAN of a lifetime since it was born, insurance education has come of age, and flourished, in its middle years, into a full-sized giant. This June it has the old grads, the new grads and the jobs to prove it.

Old grads are recalling the pioneer beginnings of insurance education—in scattered lectures at Harvard, Yale and other institutions, and the first continuous insurance course at the University of Pennsylvania starting in 1904.

Newer graduates and alumni of the past 20 years have seen insurance education romp to varsity status in campus curriculums. Enrollment in insurance courses shot up 257 per cent between 1938 and 1957, according to the survey of college and university courses in insurance published by the S. S. Huebner Foundation for Insurance Education.

The number of schools offering insurance courses rose 110 per cent; number of courses, 210 per cent; total class hours spent in those courses, 316 per cent.

It took 301 per cent more insurance teachers to handle this unprecedented expansion, 280 per cent of them entering the field since 1948.

Today more than 1,300 instructors at 460-odd institutions of higher learning offer 1,800 insurance courses to more than 65,000 students every year. Many of these students — some 27,000—are enrolled in general survey courses in insurance, more for their own personal knowledge and understanding than with insurance careers in mind. But the professional courses in property, casualty and life insurance, insurance law and other areas make up by far the greatest number of the total. Here are fertile hunting grounds for insurance company recruiters, especially as more and more firms turn to college graduates, embodying the professional concept of insurance, to meet their personnel needs.

Insurance Big Field for Trained Personnel

Those needs this June are greater than ever before, as indicated by a *Journal of American Insurance* survey of members of the American Association of University Teachers of Insurance. For insurance has grown into the fifth largest industry in the U. S., employing nearly one in every 50 persons in the country's total labor force. And as it has broadened its scope and its services, the need has increased for more and more skilled and specialized employees.

Today it takes underwriters, attorneys, ad-

justers, engineers, actuaries, inspectors, doctors, nurses, researchers, salesmen, field supervisors, advertising and public relations men, real estate and investment counselors, personnel workers, clerks, secretaries, accountants, automatic machine operators and administrators to conduct the big business of insurance.

The number of jobs in insurance rose 65 per cent between 1946 and 1958, and more and more of them required specialized training to enable insurance people to serve as partners to the doctor, lawyer, banker, fireman and policeman in guarding their policyholders' health, homes, businesses, families, incomes and futures.

Seeking new people for these functions, hundreds of insurance firms have been recruiting insurance, business, law and liberal arts graduates this spring. The University of Wisconsin, for example, reported nearly 60 insurance organizations scheduled interviews there; many others sent written requests or contacted students directly.

Job opportunities in insurance well outnumber the supply of graduates, most professors reported, especially in such shortage fields as actuarial science. The number and variety of openings indicate last year's recession slowup is over, although Professor R. M. Stevenson, Texas A. and M., for example, believes that "underwriting losses and general business conditions" still will limit hiring in insurance (and other fields) this year. Companies will be more selective than in the past, he added—a characteristic that graduates and college placement officials have noted in most areas lately.

"Excellent Opportunities" Seen for Women

For women in insurance, there are "excellent opportunities, and we could use three times as many women as we have," said Lawrence J. Ackerman, dean of University of Connecticut School of Business Administration. Openings for women in group insurance, personnel, advertising, claims adjusting and liability underwriting were reported some places, although a number of professors called opportunities very limited, largely to clerical and secretarial positions.

Starting salaries in insurance compare favorably with those in most other fields, most of the professors indicated. They range from $3600 to $5000, on the average, one expert estimated, with actuaries, accountants and lawyers generally able to command somewhat more. A good salesman may earn $10,000 a year within five years, some companies say, and advancement within a firm often is rapid.

Pay generally is lower for women than for men and for local agency employees than for large national or regional company workers. These groups tend to lower the all-industry average, so that average 1958 starting pay in insurance was $366 a month, compared with $411 for business in general, according to the Midwest College Placement Association. As a class, only government jobs paid less ($351).

This was one criticism raised by John W. Cowee, vice chairman of business administration at University of California. He classed the '59 outlook for jobs in insurance as "the same as in previous years . . . not good. Other fields present more frequent placement opportunities at better salaries than most insurers offer." Many companies do not recruit college graduates, Cowee added, but prefer to wait for applicants to "come in." Usually it's a long wait, he indicated, as other businesses snap up the top students in pre-graduation interviews. "I think an insurance career should demand first-rate people," he said, "but I believe most of them go into other employment, largely by default."

New Professionalism Growing in Industry

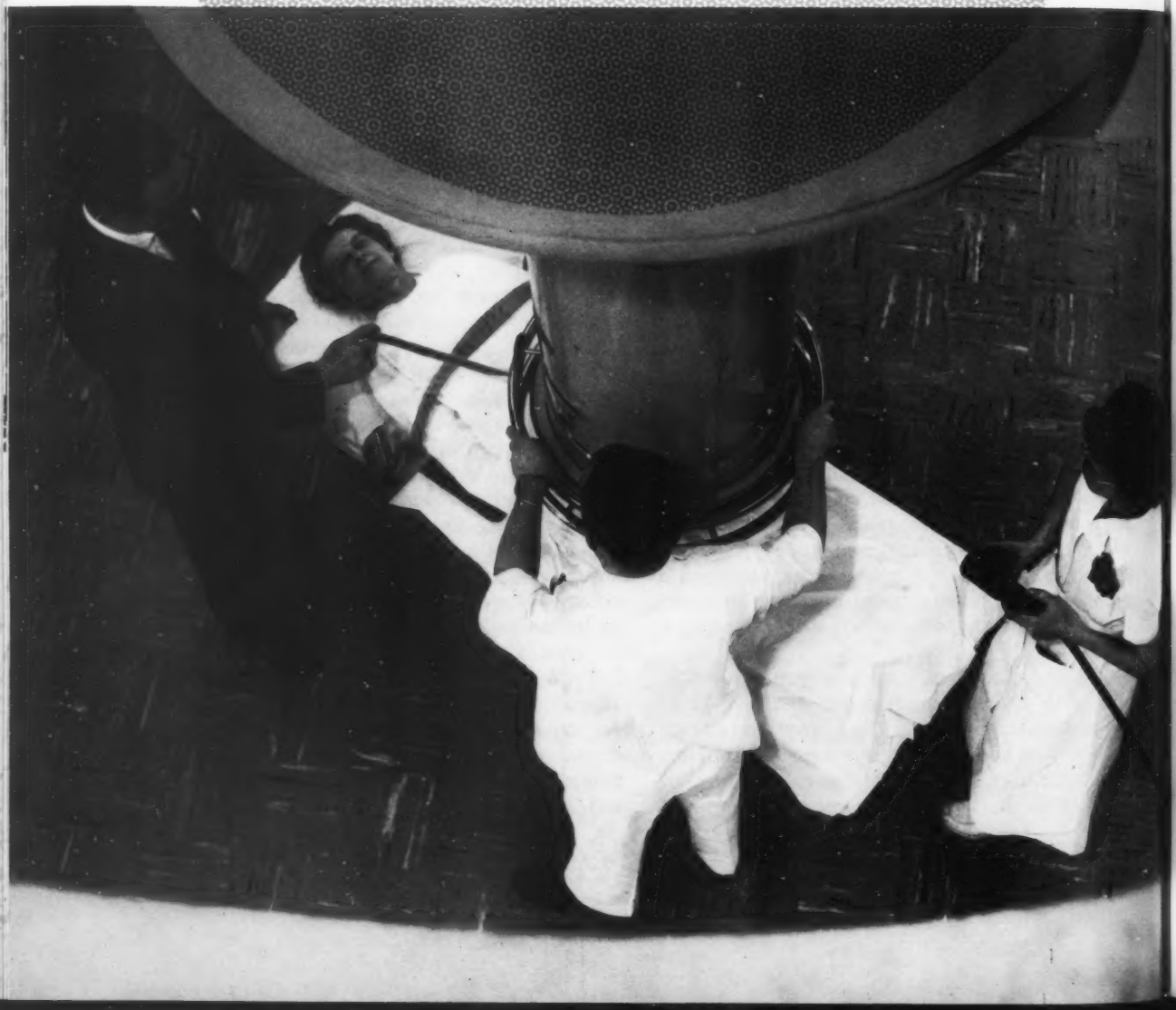
Many of the professors echoed the comment of Professor Stevenson, though, that "generally . . . insurance companies are looking for a higher-caliber man today than they did a few years ago, with the idea in mind of creating professionalism within the industry." They want good academic background in business and liberal arts, intelligence, enthusiasm, good personality, leadership, reliability, ability to communicate and get along with people, the teachers said.

As for the graduates, they too increasingly reflect the professional concept, it was noted. Some still go into the business only because their fathers are in it, or for the money they can make, but "more and more students are coming to recognize that the services rendered by insurance men will give personal satisfaction to them as well as to the insured," as Professor J. P. Jones, University of South Dakota, put it. Interest in the work and the long-run outlook for advancement and financial success influence them more than starting salaries, added Professor C. Arthur Williams, University of Minnesota. ⊙

MAGIC OF MEDICAL

Yesterday's theories become today's therapies in health and rehabilitation.

Bird's-eye view of a patient under GE's 2-million volt X-ray therapy machine at Hospital for Joint Diseases. Giant unit was assembled in laboratories of the GE X-ray plant in Milwaukee.



By R. E. Atkinson

ELECTRONICS

MEDICAL ELECTRONICS—a hybrid of biology and engineering that promises lifesaving, disability-sparing advances within the lifetimes of most of us—came of age early this year with the dedication of the world's first nuclear reactor designed for medical use. Soon to be put into operation, the 1,000 kilowatt reactor is a major part of the new Medical Research Center at Brookhaven National Laboratories, Upton, Long Island, New York.

A major use of the powerful beams of neutrons from the reactor core will be for cancer therapy. It is possible to produce short-range radiations that can destroy tumorous tissue with minimal damage to surrounding healthy tissue. Dr. Lee E. Farr, medical director, says the treatment is in the research stage, but results to date have been promising. The reactor will also make radioisotopes used for diagnosis and for investigations into fundamental body processes. It will have enriched uranium fuel elements and will be water-cooled and moderated.

The Brookhaven Medical Research Center, its laboratories gleaming with the tools of the atomic age, represents a $6.5 million investment. Nuclear medicine, however, is merely one branch of medical electronics.

The day may come when "artificial kidneys, lungs, and even hearts may become as familiar as artificial teeth or hearing aids," David Sarnoff, Chairman of the Board of the Radio Corporation of America, predicts.

He admitted that the idea of compact electronic substitutes for defective or injured body organs might seem fantastic, "but as the marvels of electronics unfold, the line between fantasy and fact is ever harder to define." Sarnoff explained that electronics can amplify very minute muscular efforts: "The outlook—though as yet only a hope—is for equipment which, attached to the stump of an amputated limb or to some other part of the anatomy, will actuate and control movements of an artificial leg, arm or even fingers."

Some of the prophets of medical electronics go much farther than Sarnoff and predict that electronic brains will all but replace the human diagnostician in medicine. While nothing will ever really replace the physician's intimate knowledge of his patient and his human judgment based on this knowledge, "Doctor Robot" is a useful and irreplaceable medical assistant.

One of the most heartening of recent advances is an electronically operated typewriter which enables paralyzed patients with only a minimum of head movement to type 30 words a minute. This was announced recently by Boston University School of Medicine and Boston City Hospital. The typewriter is the brainchild of Dr. Alan Ziskind, of Belmont, Mass.

The patient wears a small parallel-beam headlight which he focuses on a photo-electric panel board containing the letters and symbols of a standard typewriter keyboard with commonly used letters grouped together.

According to Dr. Ziskind, the typewriter is ideal for use by patients with spinal cord injuries, where the body may be completely paralyzed but the brain is still intact. So far it has been used successfully by polio patients, cerebral palsy victims, and by people paralyzed by accidents. It must be modified slightly to meet the needs of each individual patient.

Another boon for the disabled is an "aural reading machine" with which the blind can read ordinary typed or printed material such as books and magazines. The development of this new device was reported recently by the Veterans Administration. It was designed and is being evaluated by the Battelle Memorial Institute of Columbus, Ohio, under VA contract.

A probe held in the blind person's hand is moved over the printed material to be read. The probe contains two small lights and a lens that projects an image of the printed letter upon a row of photocells. Each photocell, when it "sees" black, acts like the key of an electric organ to generate a specific pitch of sound proportional to the black portion of the letter seen. These sounds are heard by the blind through earphones connected to a transistorized oscillator-amplifier. The tones are similar to chords played on an organ.

By interpreting the tones, trained users ultimately should attain a reading speed of from 15 to 30 words per minute, according to Battelle

Institute. Advantage of the machine over Braille is that the blind user can read material in normal print, including typewritten business correspondence. It will offer the blind new ability for the reading demands of office work and schooling. A few prototype models of the reader have been made. If further development justifies, the Veterans Administration hopes to furnish the readers to blinded veterans for their home use within the next few years, together with organized training programs.

Radar-equipped canes; "ears" for the deaf that change sound into vibrations recognized by finger tips; extra "hearts" activated by implanted radio receivers; electronic stingers that make leg muscles imitate walking and prevent blood clots in bed-ridden patients after surgery —these and other devices now developmental may become commonplace in the future.

In our era of rapid technological progress yesterday's theories soon become actual therapies.

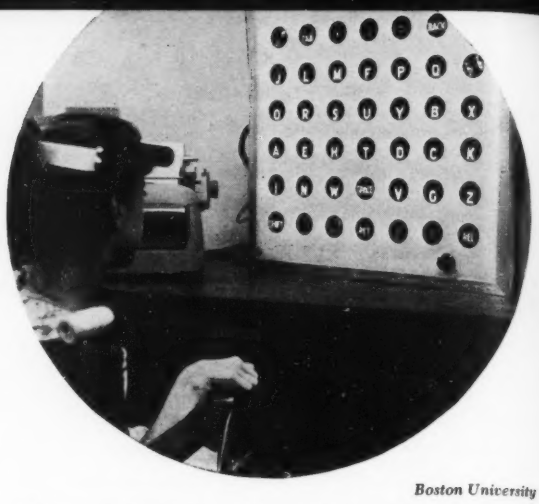
RISK QUIZ

"I cannot help expressing a wish . . . that every member doubt a little of his own infallibility."—B. FRANKLIN

HOW'S YOUR INFALLIBILITY ON THIS?: Nine happens to be the sum which is up on these three dice. But the sum of 10, as well as 9, is producible by six different combinations of the various numbers on three dice. Do the sums of 9 and 10 come up equally often?

THE SURPRISING ANSWER was figured out several hundred years ago by Galileo Galilei, Italian astronomer (1564-1642), for a gambling house operator whose books were failing to show a profit on the "play," or the assumption, that the sums of 9 and the 10 came up equally often. Galileo's calculation may well have been the first time in man's history that a risk was precisely estimated.

He established that when three dice are thrown there are 216 possible events. Of these, 27 produce a sum of 10 whereas only 25 produce a sum of 9. Thus it would be a poor risk to count on a sum of 9 against a sum of 10. ⊙



Boston University

An electronic typewriter which enables a paralyzed person to type by flashing a light attached to his head onto the photoelectric panel board shown at right is a new medical marvel.

Even the common electronic air-conditioner has a role in medicine for which it seldom receives credit—it gives the failing heart a rest in hot, humid weather. Cool air relieves the body's circulatory system of its job of cooling, means less heart pumping for the patient. American Heart Association's Dr. G. E. Burch once said that he would almost as soon ask a patient with heart insufficiency to run around the hospital as to spend a hot, humid day without air-conditioning. "Greater use of air-conditioning of the patient's room at home or in the hospital is essential if the patient's heart is to rest on hot and humid days, especially if this type of weather develops suddenly."

Hay fever and asthma sufferers may find help in another type air conditioning machine called an electrostatic precipitator. It creates an electromagnetic field, charging incoming pollen particles with one kind of electricity and attracting them into a box charged with the opposite kind. This kind of air purification, which can be adjunctive to an air cooler, helps some, but not all sufferers, according to a study conducted at Massachusetts General Hospital by Harvard University researchers.

Grandfather's Heart Shocked Into Beating

Certainly one of the most dramatic examples of the potential of medical electronics was the 96-day bout with death of a 76-year-old Brooklyn grandfather. During this time, after his own heart failed, doctors literally plugged his heart into an electrical socket. They did this by sending a tiny wire with a shocking tip up a blood vessel of his left arm to make contact

Battelle Memorial Institute

New electronic device enables the blind to "read" ordinary typed or printed material by hearing. Scanner turns letters into rays of light, which then activate organ-like chords.

Naval Medical Research Institute

Sending set on sailor, unattached to outside wires, transmits data on heart functioning, respiration, other processes to receiver in other room for study of various jobs' energy needs.

with the vital blood pumping organ. The other end of the wire was attached to an instrument called a "pacemaker" that regulated the artificial heart beat stimulated by the outside electrical current. The patient's heart beat was monitored by another machine. If it stopped beating for as long as 5 seconds, a brief 1½ volt shock jolted the heart back into activity.

The patient finally went home on Thanksgiving to his wife, four children and 11 grandchildren, minus the electrical heart, but with a spare pacemaker on hand ready for any emergency!

One of the common difficulties of the heart patient and his doctor is knowing how much he really can do without too great danger. Assessment both of the true capacity of the individual and of the actual energy requirements of a job once were a matter of guesswork. Today several types of electronic devices are busy gathering data on these important matters. When researchers used an electrocardiograph to chart the energy requirements of married love, the newspaper-reading public read the account with more than scientific understanding. The heart really does beat faster!

At Naval Medical Research Institute, Commander Norman Lee Barr has gathered data on job energy requirements with a radio device he first used in monitoring the physiological state of pilots rocketing through the air far from his receiver on the ground. When I interviewed Commander Barr months ago, the applications of such equipment to outer-space-medicine were not pertinent; but it is now obvious that space and medical electronics will be closely interlinked. Commander Barr recently aided medical men in a trial of diagnosis over long-distance telephone wires. They sent physiological readings of heart patients in Bethesda, Maryland, to doctors in Kansas City, a thousand miles away. There, doctors correctly diagnosed the heart ailments of the Bethesda patients. They were not fooled by one who had a right-sided heart!

Since the first transistors were invented in 1948, one of their major uses has been as tiny replacements for bulky vacuum tubes in miniature equipment such as hearing aids and midget radios. Given the impetus of the race into outer space, engineers have further reduced the sizes of electronic components, so that some now are hardly larger than the head of a pin, and circuits printed in metallic ink have replaced bulky wiring. Some instruments formerly too large for the small clinic or doctor's office now fit in nicely.

Physicians May Have Own Portable X-Rays

One of the most remarkable miniatures owes its size not to transistors, but to atomics. The harmful element in atomic bomb fallout, strontium-90, is the radioactive power source for an experimental X-ray machine smaller than a match stick. Dr. Leonard Reiffel, of Armour Research Foundation, developed the miniature device, a tenth of an inch in diameter and three-tenths of an inch long, that houses the power supply for this incredible device.

The miniature machine was first used for industrial applications such as measuring the

thickness and quality of metals. If it can be perfected for clinical use, the physician will be able to carry his own portable X-ray equipment in his bag. It might be used, for example, in locating an open safety pin that a child had swallowed.

Much as it is contributing to clinical medicine, electronics is even more important, in the long run, to basic research. There are instruments that can sense electronic particles *trillions* of times smaller than a bacterium. These isotope counters can be used to find out where in living cells various nutrients are taken up (after nutrient solution component has been made radioactive). Electron microscopes, which use streams of electrons instead of light and magnetic coils instead of lenses, enable man to visualize viruses, smallest of the microbes. Polio virus, for example, measures only about 1/25,000,000 of an inch, cannot be seen with ordinary microscopes.

Many interesting leads continue to open in medical electronics. For example, two University of Illinois researchers have just reported that magnets hold back old-age signs in mice. Before you build up an electronic magnetic field around the office desk, however, consider this: unfortunately, magnetized mice have been sterile thus far.

Today with delicate microelectrodes, we are even beginning to explore the almost limitless constellation deep within the human brain. Here is a universe of some ten billion nerve cells hardly less challenging than the vastnesses of outer space.

But as the limits of man's audacity against ancient unknowns and age-old diseases expand, so the time it takes to progress seems rapidly to contract. Electronic brains solve problems in minutes instead of months. Electronic systems find the same answers to some problems of genetics that scientists used to arrive at by painstaking breeding of generation after generation of fruit flies.

If we do not use our atomic skills to blow each other off the face of the earth, a longer and healthier life seems in prospect for many of us. A quarter-century of work with the new electronic tools will get us two or three hundred years of relative progress in medicine today. ⊙

Franklin's invention of the lightning rod, now available in several types and styles, followed his June kite-and-key discovery.

Record losses often occur in rodless ... yards, where lightning is chief cause ... fire. Toll here, Chicago yard, $2 ...

JUNE PYROTECHNICS—CALAMITY WREAKER

Lightning, fiery giant unmasked by Franklin, still takes its awesome toll.

LIGHTNING THIS MONTH will probably inflict $20 million damage in fires over the nation, especially in rural neighborhoods and suburbia. The likelihood is that it will also kill 120 persons and injure 300 more, including some hapless golfers swinging metal-shafted clubs in a thunderstorm. Total property losses are going up at the rate of 10 per cent each year.

One thing lightning hasn't done is ruin the reputation of June for "innocence," "rare days," and other poetic credits. Yet June usually brings about a fifth of the year's lightning destruction, with 60 per cent occurring during the peak thunderstorm period of June, July and August. The rising annual toll of loss by lightning, which according to the Lightning Protection Institute now averages in excess of $100 million, is alarming home-owners, builders, fire engineers and insurance firms.

But there is a way to reduce this loss, thanks to Benjamin Franklin. Lightning was a complete mystery, it seems, until Franklin discovered its identity with electricity—the same year he founded this country's oldest mutual insurance company, 1752. Franklin soon developed the first electrical gadget, the lightning rod, still in use today, basically unchanged and very effective. It's simply a safe catch for the electric charges of lightning, often described, however, as the world's most perfect invention.

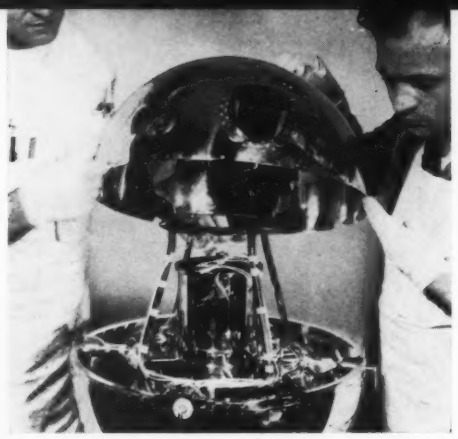
Rodding has one aim—to direct lightning either into the ground or into the air, whichever way it is headed. We have to look up to see lightning, and it seems like a bolt from the blue, as it's sometimes called. But it travels upward as often as down. In fact, scientific observation atop the Empire State Building has shown that four of five strikes originate there and dart toward the clouds.

A Master Label rodding system, meeting the stiff inspection requirements of Underwriters Laboratories, insures protection not only from lightning but from gyp artists on the hocus-pocus market. "Smoothies" sometimes even try to pass off painted rope for copper conductor cable. And lightning is finding a continually bigger target of sitting-duck dwellings, churches, schools and shopping centers in suburbia, where together with rural areas it's now causing 37 per cent of all fires. That's three times the number started by any other factor.

With almost no "cone protection"—no taller, safely rodded structures close enough to absorb the brunt of lightning's lashes—each building in the open country or in suburbia is a danger spot.

Yet many "boom area" settlers are unaware of the danger, and so don't know the importance of lightning protection. Many still think, erroneously, that danger is greatest outdoors, especially under a tree. On the other hand, many states now see the urgency of *proper* protection. Their insurance commissioners allow big credits on farm buildings for reliable rodding especially when it carries the Master Label. In Wisconsin, for example, the Label means $40 discount on a three-year $20,000 farm-building policy. Texas extends credit to churches, schools and institutions.

So, Publilius Syrus was not scientifically correct when he said, "It is vain to look for a defence against lightning." And don't take chances with Benjamin Franklin's kite-and-key trick. A Russian scientist, trying to duplicate the experiment, was killed. ⊙



U.S. Army

Final assembly of Vanguard weather satellite is made by technicians at Fort Monmouth, New Jersey. Two photocell "eyes," four 36-inch antennae hint at electronic marvels inside magnesium sphere.

MIGHTY MIDGET Wit

A SHINY SILVER satellite no bigger than a beach ball has been circling the world above the clouds once every 126 minutes since February 17. It has sent back a quarter million feet of data from its tiny tape recorder—and established the feasibility of a whole revolutionary new system of weather forecasting within the next 10 years.

Rocketed into orbit by a Navy Vanguard II, the National Aeronautics and Space Administration's "weather eye" satellite is just 20 inches in diameter and weighs only 21½ pounds. Its batteries died after two weeks, and its photoelectric "eyes" never could really "see" as they looked down on the earth's constantly changing cloud cover.

Yet this small sphereful of electronic equipment, which may remain in its now silent orbit for hundreds of years, has pioneered in the formation of what government spacemen envision as a comprehensive network of satellites, constantly watching weather conditions all over the world and reporting them back to earth, 300 to 2,200 miles away.

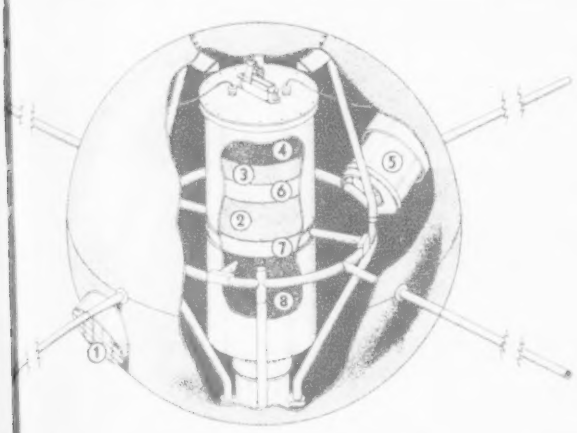
Such a system should bring weather forecasting close to 100 per cent accuracy on a global basis, even 60 to 90 days ahead. It could save U. S. farmers, airlines, shippers, industries, utilities, homeowners and insurance companies several billion dollars a year, particularly in hurricane and tornado-prone areas where early warning may mean the difference between safety and destruction. Perhaps most significant of all, it could possibly be the basis for the actual control of weather at some time in the future.

The satellite was designed and developed by the Astro-Instrumentation Branch, U. S. Army Signal Research and Development Laboratory, Fort Monmouth, New Jersey, and launched at Cape Canaveral, Florida, as part of the U. S. program for the International Geophysical Year.

Its two telescopic photocell "eyes" were light-sensitive, scanning the earth's cloud cover with a "field of vision" about seven miles wide and 600 miles long. The contrasts of light they "saw" and recorded for transmission to earth tracking stations gave meteorologists valuable information about weather over some 25 per cent of the earth's surface; the data is still being transcribed and analyzed. Current methods cover only about 5 per cent.

Goal of scientists is 100 per cent coverage, including the oceans and arctic regions, where storms often build up undetected. Immediate transmission of data to earth also must be made possible for effective use in weather forecasting. The planned network of weather satellites would meet both needs, scientists believe. It would involve 6 to 18 satellites orbiting a few hundred miles above earth, feeding their "weath-

Cutaway of satellite: (1) photocell light shield; (2) recorder; (3) interrogation radio receiver; (4) meteorological data transmitter; (5) photocell; (6) data electronics; (7) tracking transmitter, and (8) batteries.

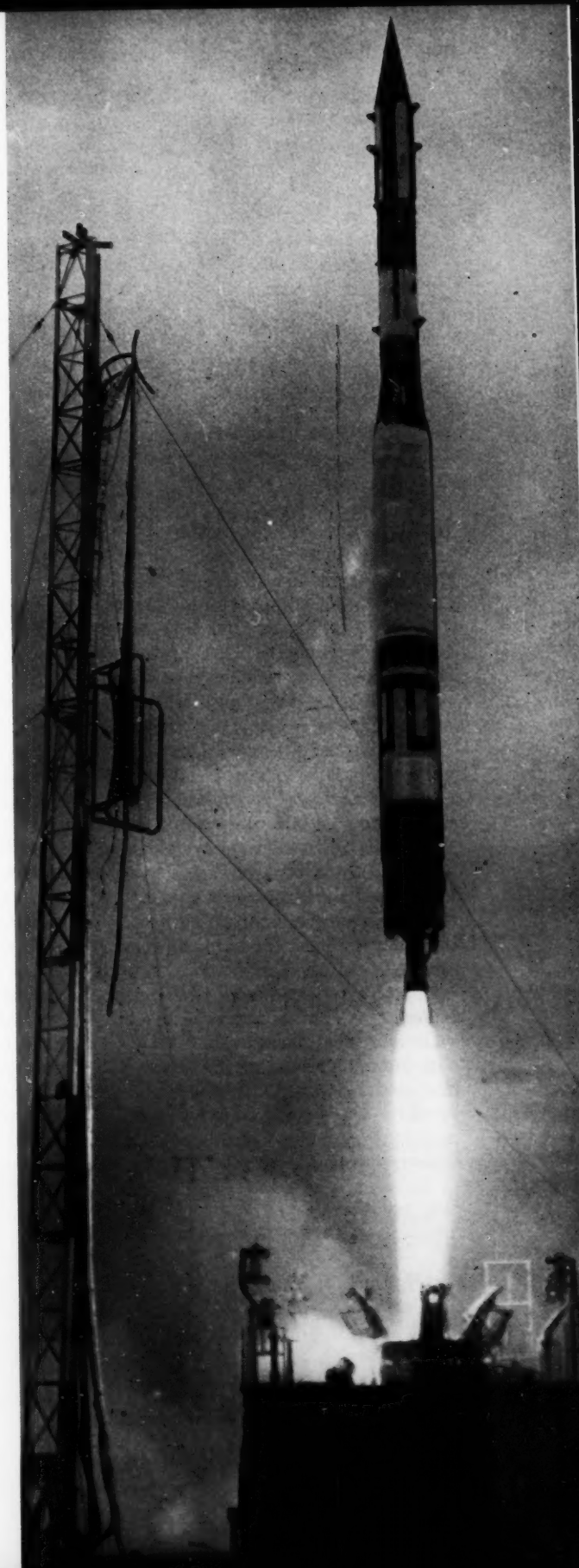


Wit a Big Weather Eye

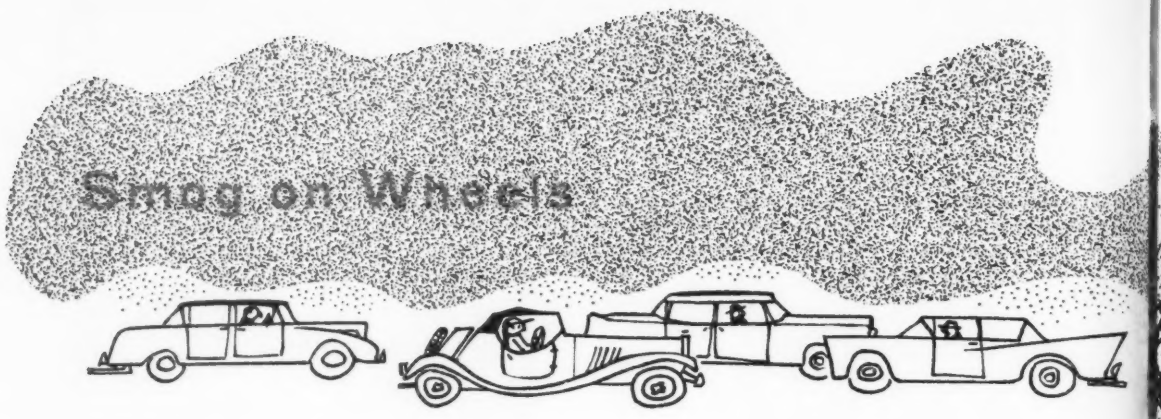
er reports" to two or three communications-center satellites farther out in space for transmission to earth.

Another plan, Project Tiros, being developed by the Advanced Research Projects Agency, would equip each satellite with three TV cameras, producing 1,000 detailed pictures every 24 hours and storing them in a magnetic tape recorder for playback to earth upon command. With heat and moisture contents known for every part of the world, as well as cloud formations, weathermen should be able to make their forecasts with far more accuracy than they can now, even with data from modern weather balloons, jets, rockets and radar.

Eliminating the element of surprise can cut tornado damage 60 per cent, one expert has estimated. Figures for other types of destructive weather are similar. This indicates the value of advance warning. Then, if weather control methods could be developed, too, the world might actually see the end of natural disasters that have cost thousands of lives and millions of dollars in property loss in every generation of history. ⊙



Split seconds after blastoff at Cape Canaveral, Florida, Vanguard II hurls toward orbit. Satellite was carried in third stage of this four-stage launching vehicle, fired February 17.
National Aeronautics and Space Administration



It's beginning to clear, thanks to promising research on auto exhaust.

HENRY FORD himself admitted that his 1895 gasoline buggy—the first and for a few years the only automobile in Detroit—was something of a nuisance. It made a racket, scared horses, blocked traffic, created a speed hazard—and emitted smoke every time the engine fired.

Among those automotive Mohocks which not only are still with us but are growing alarmingly every year is the last one, the high-priced nuisance of auto exhaust. Multiplied by the nearly 70 million vehicles now operating in the U. S., auto exhaust today is a major factor in much of the country's air pollution, and costs the public millions of dollars a year in damage to health, vegetation, paint, clothing, automobile finishes and property values.

But fortunately much is being done toward reducing or eliminating this nuisance. Federal, state and local agencies and private businesses have joined the effort; the automobile industry has spent $5 million in five years in research.

Now, they say, they have learned how to "reduce substantially vehicle exhaust gas emissions." If and when their technological breakthroughs can be translated into practical, economical terms for widespread use, which admittedly will be difficult, people may be able to breathe again without discomfort or disease.

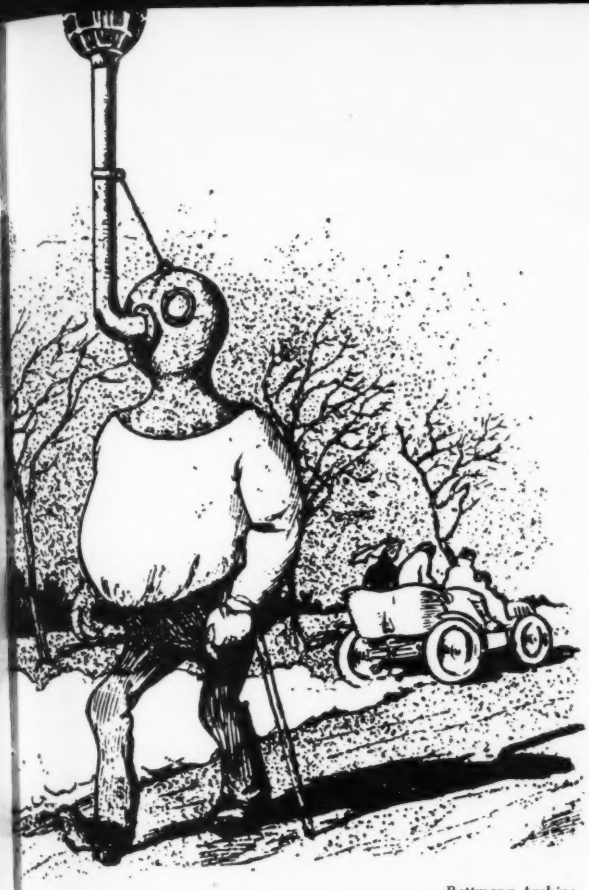
The main solutions proposed fall into two categories: devices to be attached or built into automobiles to reduce the amount of exhaust pollutants they can emit, particularly hydrocarbons (organic vapors); and a program of engine tuneups, careful car maintenance and exhaust inspection aimed at accomplishing the same end.

There is much disagreement over which method would work best and cost least. Los Angeles county and California state legislators, among others, are pushing for the first one, now that auto makers have announced that experimental exhaust-control devices can reduce

U.S. Public Health Service

Technician at Robert A. Taft Sanitary Engineering Center, Cincinnati, examines equipment for forthcoming auto exhaust studies. Car fumes will mix with air, synthetic sunshine to duplicate conditions in typical Los Angeles smog.

Experimental catalytic converter is tested in General Motors Research Laboratories as part of automobile industry's cooperative research effort to reduce hydrocarbons and nitrogen oxides in exhaust gas emitted by autos.

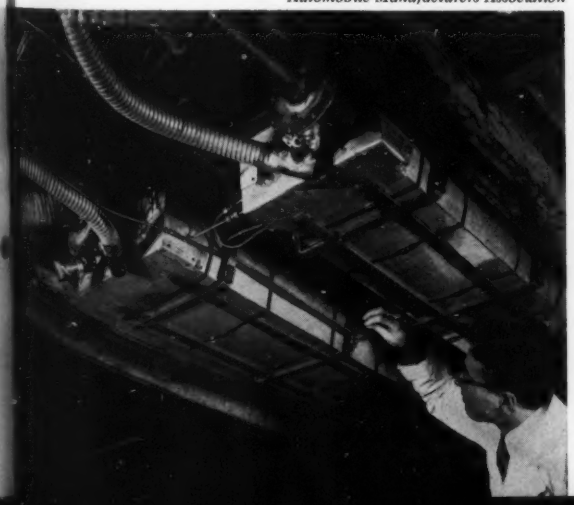


Bettmann Archive

Jokesters proposed this solution for exhaust-polluted air back in 1904, little dreaming how the problem would grow as pioneer "gas buggies" multiplied into some 70 million vehicles today.

hydrocarbon emission 60 to 90 per cent. Auto makers fear the cost is too heavy a burden for car owners and say good maintenance alone could cut hydrocarbon emission by more than two-thirds. Cost estimates for control and inspection programs are high too, however. In Los Angeles, where cars cause two-thirds of the city's notorious smog, it would take 1,000 inspection stations 16 hours a day to operate such a program successfully, one expert said. There are three million vehicles in Los Angeles.

Automobile Manufacturers Association



A combination of maintenance-inspection and exhaust-control devices could reduce Los Angeles' hydrocarbon exhaust to a mere 2 per cent of its present level, an auto industry spokesman said, but the cost would be prohibitive.

The two principal types of control devices successfully tested are catalytic converters, which cut hydrocarbon by chemical oxidation before the gas enters the combustion chamber, and afterburners, which run exhaust through another chamber and burn up the hydrocarbons left in it before emitting it from the tailpipe. The devices would cost $100 to $200 in a new car, more in an older model. Their lifetimes range from 10,000 to 23,000 miles, a year or two's driving for the average motorist.

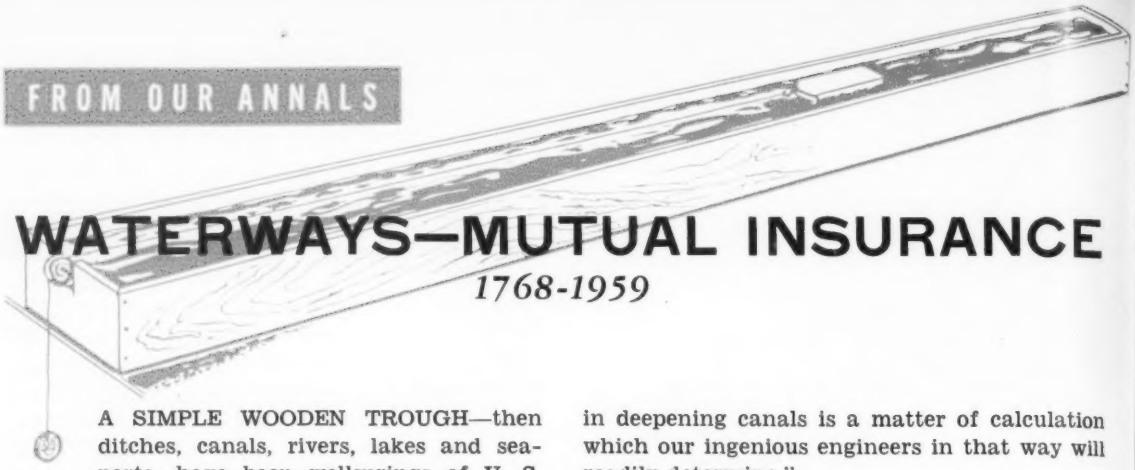
Use of a rich carburetor mixture along with a converter reduces hydrocarbons emission better than the device alone, but would eat up about 25 per cent more gas, at a cost of $40 to $70 a year to the average motorist.

So auto makers stress engine tuneups and good maintenance of sparkplugs, points, condensers, carburetors and fuel lines. They're also working on devices to cut off fuel flow when a car is slowing down or idling. (Deceleration has been blamed for 60 per cent of all auto exhaust, although new studies indicate 30 per cent is closer.) Methods also are being sought to cut down sulfur and nitrogen compounds, solid pollutants, aldehydes, carbon monoxide, organic acids and ammonia that flow from tailpipes along with hydrocarbons. And a low-olefin gasoline widely advertised as "anti-smog" recently was introduced on the West Coast, setting off a "clean gas" battle among oil companies.

The Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, center of the National Air Sampling Network program which is leading the way in cleaning up the nation's air, ("Our Troubled Air," *Journal of American Insurance,* May 1959) will start a comprehensive study July 1 to evaluate the effectiveness of these various methods.

Meantime, it obviously is an appropriate time for somebody to come up with a solution without the controversy. At least two companies have, in their opinions. In Detroit and New Orleans within the last two months, they announced plans for electric automobiles, without a bit of exhaust to pollute the air. ⊙

FROM OUR ANNALS



WATERWAYS—MUTUAL INSURANCE

1768-1959

A SIMPLE WOODEN TROUGH—then ditches, canals, rivers, lakes and seaports—have been wellsprings of U. S. spirit and power throughout the 183 years of our history. National solidarity, territorial settlement, easy transportation, increased trade, security, mutual insurance and even the earliest forms of automation had their beginnings or their boosts on historical watercourses.

Many of these were little more than ditches, hand dug with picks, shovels and wheelbarrows. In miniature, these memorable waterways mirror what the vastly greater St. Lawrence Seaway portends for the world, now that 80 to 90 per cent of the world's deepdraft cargo ships can ply between the sea and the Great Lakes.

In fact, a simple wooden trough fashioned by Benjamin Franklin is the very prototype of the engineering feats which made the Seaway possible. His influence and public service have come down through the years, notably through his fatherhood of insurance and more especially mutual insurance. Now his talents and celebrity show forth again in the Seaway.

Pre-dating the Seaway by 191 years, Franklin shed light on channel depths as related to shipping problems in a 1768 experiment with his water-filled wooden trough. It was only 14 feet long, 6 inches wide and 6 inches deep, but it was scientifically calibrated for varying the depth of water. At different "channels" depths, a miniature "boat of burden," carefully timed, was "navigated" through the trough.

Franklin's experiment showed that canal boats were able to travel faster in deeper water, there being a difference of about one-fifth in time between the deepest and the shallowest.

Then, with a hint of Seaway mysticism, he reported, "Whether this difference is of consequence enough to justify a greater expense in deepening canals is a matter of calculation which our ingenious engineers in that way will readily determine."

It was not until 57 years later, however, that the Erie Canal, in 1825, was finished as "the largest engineering work ever completed by any government in the World"—an enormous ditch 363 miles long, 40 feet wide and 4 feet deep.

Thereupon civil engineering skyrocketed to professional status, a canal-building boom was touched off, and a new nationalism swept the country in the wake of emigration, a western boom in agriculture, flourishing trade and commerce, and the springing up of numerous large cities. Pennsylvania alone built nearly 1,000 miles of canals before 1840; farmers in an augury of automation even built sluiceways for floating heavy loads from barn to barn.

Mutual insurance was in the vanguard as the horizons pushed out on all fronts. Within 10 years after completion of the Erie Canal, the Union had expanded to encompass 24 states. In 13 of these one or more mutual insurance companies were already doing business in 1835, following the example set by the first company formed by Franklin, and still active today, The Philadelphia Contributionship for Insurance of Houses from Loss by Fire (1752).

By the time the Erie Canal was underway, The Contributionship had $3.7 million of insurance in force and a surplus of $229,000. The Green Tree, second of the mutual companies and patterned largely after The Contributionship, had accumulated a surplus of about the same size.

As the Seaway is to the Erie Canal, so is the mutual insurance industry of 1959 to the early pioneering companies. Today there are approximately 2,662 active mutual insurance companies in the U. S. with a net premium volume of more than $13 billion. ⊙

T. Nelson Parker, commissioner of insurance in the Old Dominion and new chairman of the NAIC's executive committee.

CLOSE-UPS OF OUR COMMISSIONERS

PARKER OF VIRGINIA

MUTUAL INSURANCE, a Virginia institution since the 18th century, was "at the ready" eight years ago this month when Richmond, history-shrouded capital of the "Old Dominion," took a half-million dollar battering from a tornado. And long before that 1951 disaster, mutual policies were protecting the property of such famous Virginia landowners as George Washington, Thomas Jefferson and John Marshall.

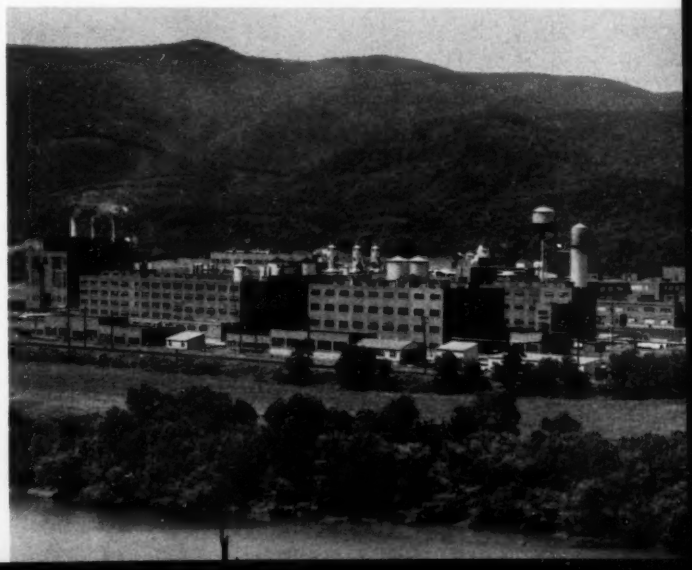
Guardian of those historical homes was the "Mutual Assurance Society Against Fire on Buildings in the State of Virginia," reports present chief insurance administrator, T. Nelson Parker. Incorporated in 1794 by an act of the General Assembly, "Old Mutual" is still active, Parker adds, and celebrated its 163rd continuous year of coverage on the Marshall house last February.

Today a treasureland of Southern history, Virginia has a host of churches, museums, estates and shrines to be protected by its thriving insurance industry. But insurance's big job in modern Virginia is pacing the state's economic advances. Among signs of the times: motor vehicle licenses have climbed some 50 per cent since 1950, to near one million and a half; population, up half a million over the same period, is around four million now; investments in industrial expansion, in excess of $200 million annually, have increased by one-half since 1953.

Corollary growth in state insurance activity is affirmed by Commissioner Parker, Virginia Bureau of Insurance head since 1956 and recently-elected chairman of the executive committee of the National Association of Insurance Commissioners. Virginia's rank today: 17th among all states in premium volume; 13th in revenue received from insurance; 16th in number of firms licensed to do business; 10th in amount of money spent for insurance department operations. Last year, nearly $10½ million in taxes were paid by 750 insurance companies on more than $400 million in total premium income. Said taxes, notes Parker, amounted to almost a half million dollars more than total industry premiums in the first year of the bureau's operation, 1907.

A University of Virginia law school graduate, Commissioner Parker was in private practice in Richmond for more than 30 years. During World War II he was regional attorney for the Office of Price Administration, and from 1950 to 1952 he served as a member of Richmond's city council and as its mayor. A past Richmond president and state deputy district governor of the Lions Club, Parker also has been president and chairman of the board of the Christian Children's Fund since 1944, as well as engaging in numerous other civic and professional activities. ⊙

Raw material for synthetic fibers comes from million and a half cords of pulpwood cut annually from Virginia's forests. *Virginia State Chamber of Commerce*



Chicago Regional Port

VIDEO

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